ORDER NO.MD0603064C2

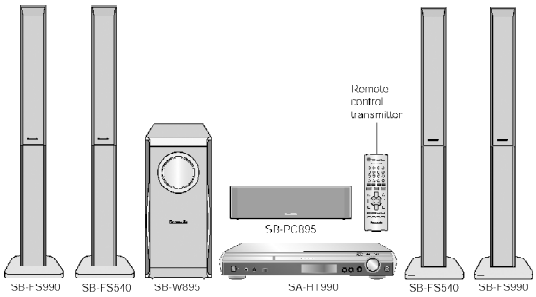
Service Manual

DVD Home Theater Sound System

SA-HT990E / SA-HT990EB / SA-HT990EG

Colour

(S).....Silver Type



SPECIFICATIONS

Specifications

- **General**

Power Source:

E/ EG areas:	**AC 230V, 50Hz**
EB area:	**AC 230V-240V, 50Hz**
Power consumption:	**120 W**
Dimensions (W×H×D):	**430×60×354 mm**
Mass:	**3.35kg**

- **Amplifier section**

RMS Output Power: Dolby Digital Mode

- **Total RMS Dolby Digital mode Power:** **1000 W**

At 1kHz and total harmonic of 10%

- **Front:** **125 W/ Channel (3 Ω)**
- **Center:** **250 W/ Channel (6 Ω)**
- **Surround:** **125 W/ Channel (3 Ω)**

At 100Hz and total harmonic of 10%

- **Active subwoofers:** **250 W/ Channel (6 Ω)**

DIN Output Power: Dolby Digital Mode:

- **Total DIN Dolby Digital mode Power:** **470 W**

At 1kHz and total harmonic of 1%

- **Front:** **80 W/ Channel (3 Ω)**
- **Center:** **75 W/ Channel (6 Ω)**
- **Surround:** **80 W/ Channel (3 Ω)**

At 100Hz and total harmonic of 1%

- **Subwoofer:** **75 W/ Channel (6 Ω)**

- **FM tuner section**

Preset Memory:	**FM 15 stations** **AM/MW 15 stations**
Frequency Range:	**87.5-108.00MHz** **(50kHz in step)**
Sensitivity:	**1.8 μ V (IHF)**
S/N 26dB	**1.4 μ V**
Antenna Terminals:	**75 Ω (unbalanced)**

- **AM tuner section**

Frequency Range:	**522-1629kHz (9kHz in step)**
AM Sensitivity S/N 20dB at 999kHz:	**560 μ V/m**

- **Phone Jack:**

Terminal:	**Stereo 3.5 mm jack**

- **Front M. Port:**

Sensitivity:	**100mV (15k Ω)**
Terminal:	**Stereo 3.5 mm jack**

- **Disc section**

Discs played (8 cm or 12 cm):

(1) DVD [DVD-Video, DVD-Audio, DivX(*1,2)]

(2) DVD-RAM [DVD-VR, MP3(*2,6), JPEG(*2,3), MPEG4(*2,4), DivX(*1,2)]

(3) DVD-R [DVD-Video, DVD-VR, MP3(*2,6), JPEG(*2,3), MPEG4(*2,4), DivX(*1,2)]

(4) DVD-R DL [DVD-Video, DVD-VR]

(5) DVD-RW [DVD-Video, DVD-VR, MP3(*2,6), JPEG(*2,3), MPEG4(*2,4), DivX(*1,2)]

(6) +R/+RW [Video]

(7) +R DL [Video]

(8) CD, CD-R/RW [CD-DA, Video CD, SVCD(*5), MP3(*2,6), WMA(*2,7), JPEG(*2,3), MPEG4(*2,4), DivX (*1,2), HighMAT Level 2 (Audio and Image)]

*1 Plays all versions of DivX ® video (including DivX ® 6) with standard playback of DivX ® media files. Certified to the DivX Home Theater Profile.

- GMC (Global Motion Compensation) is not supported.

*2 The total combined maximum number of recognizable audio, picture and video contents and groups: 4000 audio, picture and video contents and 400 groups.

*3 Exif Ver 2.1 JPEG Baseline files

- Picture resolution: between 160 x 120 and 6144 x 4096 pixels (Sub sampling is 4:0:0, 4:2:0, 4:2:2, 4:4:4). Extremely long and narrow pictures may not be displayed.

*4 MPEG4 data recorded with Panasonic SD multi cameras or DVD video recorders.

- Conforming to SD VIDEO specifications (ASF standard)/ MPEG4 (Simple Profile) video system/G.726 audio system.

*5 Conforming to IEC62107

*6 MPEG-1 Layer 3, MPEG-2 Layer 3

*7 Windows Media Audio Ver.9.0 L3

- Not compatible with Multiple Bit Rate (MBR)

Pick up:

Wavelength:

● CD:	785nm
● DVD:	662nm

Laser power:

● CD:	CLASS 1M
● DVD:	CLASS 1

Audio output (DISC):

Number of channels:	5.1 ch (FL, FR, C, SL, SR, SW)

Audio performance (Measurement at BE out terminal):

Frequency response:

DVD (linear audio):	4 Hz-22 kHz (48 kHz sampling)
	4 Hz-44 kHz (96 kHz sampling)
DVD-Audio:	4 Hz-88 kHz (192 kHz sampling)
CD-Audio:	4 Hz-20 kHz

S/N ratio:

CD-Audio:	105 dB

Dynamic range:

DVD (linear audio): 95 dB

CD-Audio: 95 dB

Total harmonic distortion:

CD-Audio: 0.005 %

● **Video section**

Video system:

Signal system: PAL 625/50, PAL 525/60, NTSC

Composite video output:

Output level: 1 Vp-p (75 Ω)

Terminal: Pin jack (1 system)

Scart jack (1 system)

S-video output:

Y output level: 1 Vp-p (75 Ω)

C output level: PAL; 0.3Vp-p (75 Ω)

NTSC; 0.286 Vp-p (75 Ω)

Terminal S terminal (1 system)

Scart jack (1 system)

Component video output (NTSC: 480p/480i, PAL: 576p/576i):

Y output level: 1 Vp-p (75 Ω)

PB output level: 0.7 Vp-p (75 Ω)

PR output level: 0.7 Vp-p (75 Ω)

Terminal: Pin jack (Y: green, PB: blue, PR: red) (1 system)

RGB video output:

R output level: 0.7 Vp-p (75 Ω)

G output level: 0.7 Vp-p (75 Ω)

B output level: 0.7 Vp-p (75 Ω)

Terminal: Scart jack (1 system)

Power consumption in standby mode:

approx 0.5W

Note:

1. Specifications are subject to change without notice. Mass and dimensions are approximate.
2. Total harmonic distortion is measured by the digital spectrum analyzer.

Solder:

This model uses lead free solder (PbF).

Mechanism:

This model uses DL2SU (Single tray) mechanism.

System	SC-HT990E	SC-HT990EB	SC-HT990EG
Main unit	SA-HT990E	SA-HT990EB	SA-HT990EG
Speaker system	SB-HT990E	SB-HT990E	SB-HT990E
Active subwoofer	SB-W895GC	SB-W895GC	SB-W895GC*4

Speaker system	SB-HT990E	SB-HT990E	SB-HT990E
Front speakers	SB-FS990E	SB-FS990E	SB-FS990E*1
Center speaker	SB-PC895GC	SB-PC895GC	SB-PC895GC*2
Surround speakers	SB-FS540E1	SB FS540E1	SB FS540E1*3

Refer to the original service manual for *1, *2, *3, *4.

MPEG Layer-3 audio decoding technology licensed from Fraunhofer IIS and Thomson multimedia.

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WMA is a compression format developed by Microsoft Corporation. It achieves the same sound quality as MP3 with a file size that is smaller than that of MP3.

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Official DivX® Certified product.
Plays all versions of DivX® video (including DivX®6) with standard playback of DivX® media files.
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■ **Built-in decoders**
You can play discs with these symbols.

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⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Panasonic

1. Safety Precautions

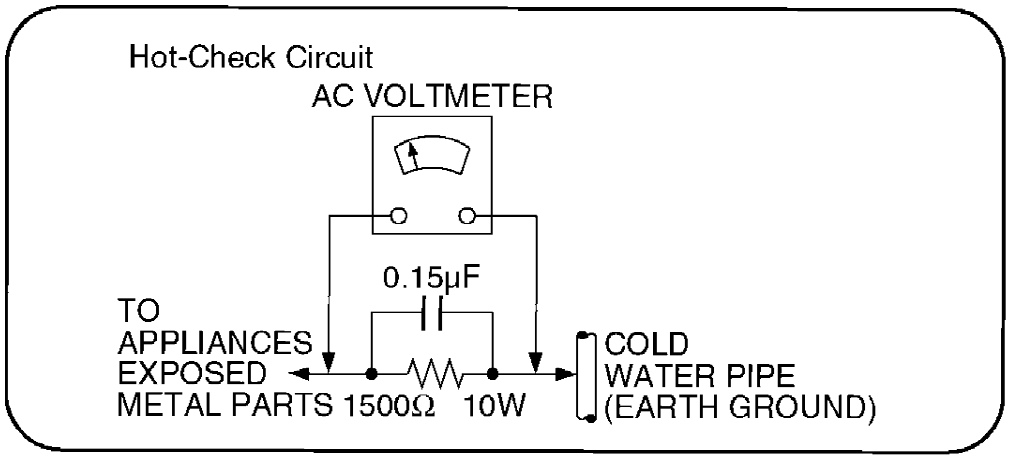
1.1. GENERAL GUIDELINES

1. **When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.**
2. **After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.**
3. **After servicing, carry out the following leakage current checks to prevent the customer from being exposed to shock hazards.**

1.1.1. LEAKAGE CURRENT COLD CHECK

1. **Unplug the AC cord and connect a jumper between the two prongs on the plug.**
2. **Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screwheads, connectors, control shafts, etc. When the exposed metallic part has a return path to the chassis, the reading should be between 1M Ω and 5.2M Ω . / When the exposed metal does not have a return path to the chassis, the reading must be ∞.**

Figure 1



1.1.2. LEAKAGE CURRENT HOT CHECK (See Figure 1.)

1. **Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.**
2. **Connect a 1.5k Ω , 10 watts resistor, in parallel with a 0.15 µ F capacitors, between each exposed metallic part on the set and a good earth ground such as a water pipe, as shown in Figure 1.**
3. **Use an AC voltmeter, with 1000 ohms/volt or more sensitivity, to measure the potential across the resistor.**
4. **Check each exposed metallic part, and measure the voltage at each point.**
5. **Reverse the AC plug in the AC outlet and repeat each of the above measurements.**
6. **The potential at any point should not exceed 0.75 volts RMS. A leakage current tester (Simpson Model 229 or equivalent) may be used to make the hot checks, leakage current must not exceed 1/2 milliamp. In case a measurement is outside of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.**

1.2. Before Repair and Adjustment

Disconnect AC power, discharge Power Supply Capacitors C5716, C5717, C5718 through a 10 Ω , 10 W resistor to ground.
DO NOT SHORT-CIRCUIT DIRECTLY (with a screwdriver blade, for instance), as this may destroy solid state devices.
After repairs are completed, restore power gradually using a variac, to avoid overcurrent.
Current consumption at AC 230 V, 50 Hz in NO SIGNAL mode volume minimal should be ~ 600 mA (For E/ EG).

Current consumption at AC 220V-230 V, 220V/230V-240V, 50Hz in NO SIGNAL mode volume minimal should be ~ 600 mA (For EB).

1.3. Protection Circuitry

The protection circuitry may have operated if either of the following conditions are noticed:

- No sound is heard when the power is turned on.

- Sound stops during a performance.

The function of this circuitry is to prevent circuitry damage if, for example, the positive and negative speaker connection wires are
"shorted", or if speaker systems with an impedance less than the indicated rated impedance of the amplifier are used.
If this occurs, follow the procedure outlines below:

1. **Turn off the power.**
2. **Determine the cause of the problem and correct it.**
3. **Turn on the power once again after one minute.**

Note:
When the protection circuitry functions, the unit will not operate unless the power is first turned off and then on again.

2. Prevention of Electro Static Discharge (ESD) to Electrostatically Sensitive (ES) Devices

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by electro static discharge (ESD).

1. **Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap, which should be removed for potential shock reasons prior to applying power to the unit under test.**
2. **After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.**
3. **Use only a grounded-tip soldering iron to solder or unsolder ES devices.**
4. **Use only an anti-static solder removal device. Some solder removal devices not classified as "anti-static (ESD protected)"**

can generate electrical charge sufficient to damage ES devices.

5. **Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.**
6. **Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).**
7. **Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.**

   Caution

   Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. **Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity (ESD) sufficient to damage an ES device).**

IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are imporant for safety.
These parts are marked by ⚠ in the schematic diagrams, Exploded Views and replacement parts list. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock. fire, or other hazards. Do not modify the original design without permission of manufacturer.

3. Precaution of Laser Diode

CAUTION: This product utilizes a laser diode with the unit turned "on", invisible laser radiation is emitted from the pick-up lens.
Wave length: 662nm(DVD)/785nm(CD)
Maximum output radiation power from pick-up: 100 μW/VDE

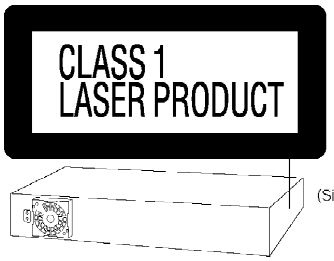
Laser radiation from the pick-up unit is safety level, but be sure the followings:

1. Do not disassemble the pick-up unit, since radiation from exposed laser diode is dangerous.
2. Do not adjust the variable resistor on the pick-up unit. It was already adjusted.
3. Do not look at the focus lens using optical instruments.
4. Recommend not to look at pick-up lens for a long time.

ACHTUNG: Dieses Produkt enthält eine Laserdiode. Im eingeschalteten Zustand wird unsichtbare Laserstrahlung von der Lasereinheit adgestrahit.
Wellenlänge: 662nm(DVD)/785nm(VCD/CD)
Maximale Strahlungsleistung der Lasereinhelt: 100 μW/VDE

Die strahlungan der Lasereinheit ist ungefährlich, wenn folgende Punkte beachtet werden:

1. Die Lasereinheit nicht zerlegen, da die Strahlung an der freigelegten Laserdiode gefährlich ist.
2. Den werksseitig justierten Einstellregler der Lasereinheit nicht verstellen.
3. Nicht mit optischen Instrumenten in die Fokussierlinse blicken.
4. Nicht über längere Zeit in die Fokussierlinse blicken.



(Side of product)

CAUTION - LASER RADIATION WHEN OPEN. DO NOT STARE INTO BEAM. FDA 21 CFR / Class
CAUTION - CLASS 1M VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. DO NOT VIEW DIRECTLY WITH OPTICAL INSTRUMENTS. IEC60825-1 +A2/ Class 1M
VARNING - KLASS 1M SYNLIG OCH OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD. BETRAKTA ELSTRÅLEN DIREKT GENOM OPTISKT INSTRUMENT.
FORSIGTIG - SYNLIG OG USYNLIG LASERSTRÅLING KLASSE 1M, NÅR LÅGET ER ÅBENT. UNDGÅ AT SE LYSE PÅ MED OPTISKE INSTRUMENTER.
VARO! - AVATTAESSA OLET ALTTIINA LUOKAN 1M NÄKYVÄÄ JA NÄKYMÄTÖNTÄ LASERSÄTEILYÄ. ÄLÄ KATSO OPTIKELLA LAITTEELLA SUORAAN SÄTEESEEN.
VORSICHT - SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG KLASSE 1M, WENN ABDECKUNG GEÖFFNET. NICHT DIREKT MIT OPTISCHEN INSTRUMENTEN BETRACHTEN.
ATTENTION - RAYONNEMENT LASER VISIBLE ET INVISIBLE, CLASSE 1M, EN CAS D'OUVERTURE. NE PAS REGARDER DIRECTEMENT À L'AIDE D'INSTRUMENTS D'OPTIQUE.
注意 - ここを開くと可視及び不可視レーザ光が出ます。ビームを見たり、触れたりしないでください。
注意 - 打开时有可见及不可见激光辐射，避免光束照射。
GB7247.1-2001/IEC 825-1:1993 类
RQLX50075

(Inside of product)

CAUTION:
THIS PRODUCT UTILIZES A LASER.
USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

4. About Lead Free Solder (PbF)

Distinction of PbF PCB: PCBs (manufactured) using lead free solder will have a PbF stamp on the PCB.

Caution:

- Pb free solder has a higher melting point than standard solder; Typically the melting point is 50 - 70°F (30 - 40°C) higher. Please use a high temperature soldering iron. In case of the soldering iron with temperature control, please set it to 700 ± 20°F (370 ± 10°C).

- Pb free solder will tend to splash when heated too high (about 1100°F/ 600°C).

When soldering or unsoldering, please completely remove all of the solder on the pins or solder area, and be sure to heat the soldering points with the Pb free solder until it melts enough.

5. Caution for AC Cord

(For United Kingdom)

For your safety, please read the following text carefully.

This appliance is supplied with a moulded three pin mains plug for your safety and convenience.
A 5-ampere fuse is fitted in this plug.
Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5-ampere and that it is approved by ASTA or BSI to BS1362.
Check for the ASTA mark ⓐ or the BSI mark ⓚ on the body of the fuse.

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.
If you lose the fuse cover the plug must not be used until a replacement cover is obtained.
A replacement fuse cover can be purchased from your local dealer.

CAUTION!
IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET IN YOUR HOME THEN THE FUSE SHOULD BE REMOVED AND THE PLUG CUT OFF AND DISPOSED OF SAFELY.
THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS INSERTED INTO ANY 13-AMPERE SOCKET.

If a new plug is to be fitted please observe the wiring code as shown below.
If in any doubt please consult a qualified electrician.

IMPORTANT
The wires in this mains lead are coloured in accordance with the following code:
Blue: Neutral, Brown: Live.
As these colours may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:
The wire which is coloured Blue must be connected to the terminal which is marked with the letter N or coloured Black or Blue.
The wire which is coloured Brown must be connected to the terminal which is marked with the letter L or coloured Brown or Red.

WARNING: DO NOT CONNECT EITHER WIRE TO THE EARTH TERMINAL WHICH IS MARKED WITH THE LETTER E, BY THE EARTH SYMBOL ⏚ OR COLOURED GREEN OR GREEN/YELLOW.

THIS PLUG IS NOT WATERPROOF—KEEP DRY.

Before use
Remove the connector cover.

How to replace the fuse
The location of the fuse differ according to the type of AC mains plug (figures A and B). Confirm the AC mains plug fitted and follow the instructions below.
Illustrations may differ from actual AC mains plug.

1. Open the fuse cover with a screwdriver.

Figure A

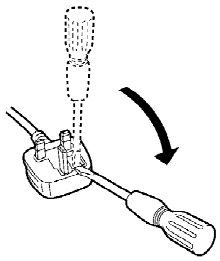
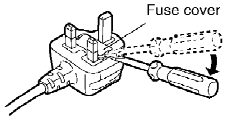


Figure B



2. Replace the fuse and close or attach the fuse cover.

Figure A

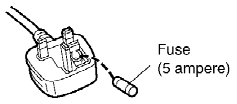
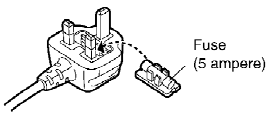


Figure B



6. Handling Precautions for Traverse Unit

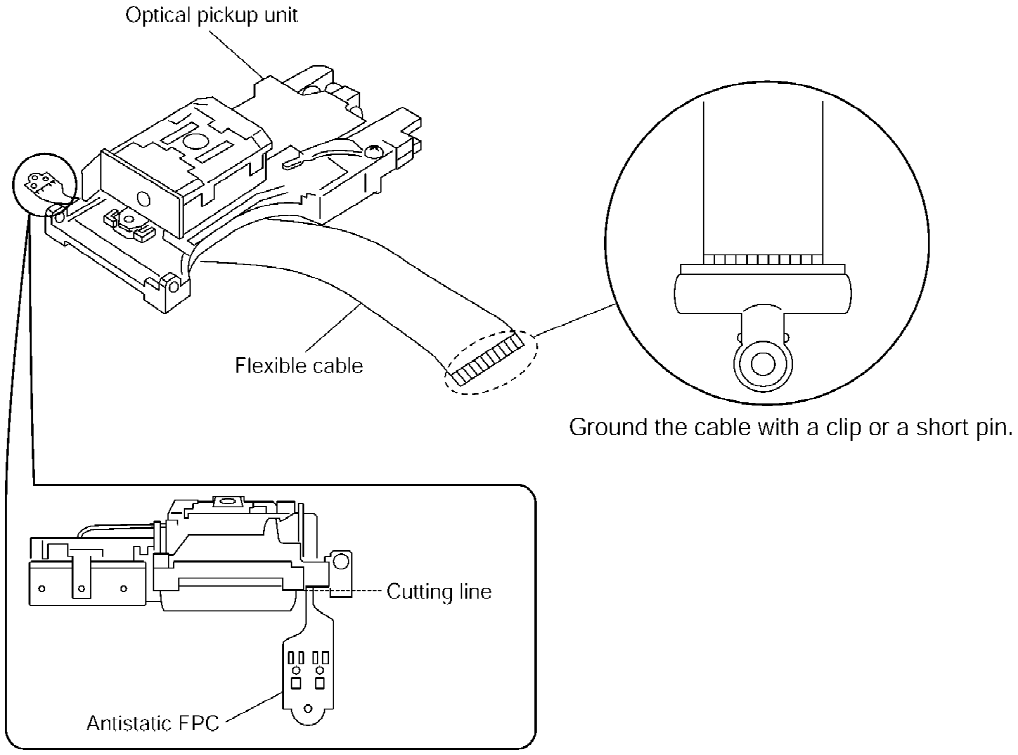
The laser diode in the optical pickup unit may break down due to static electricity of clothes or human body. Special care must be taken avoid caution to electrostatic breakdown when servicing and handling the laser diode.

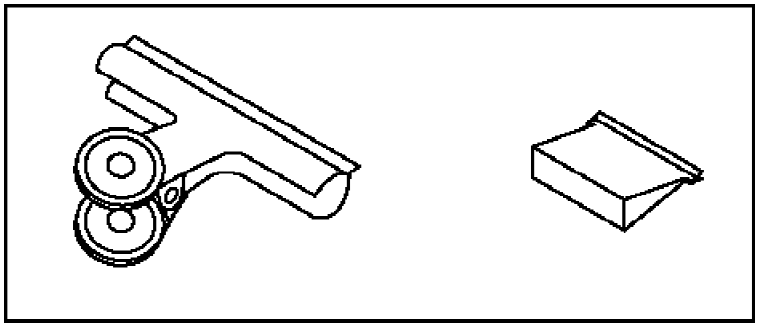
6.1. Cautions to Be Taken in Handling the Optical Pickup Unit

The laser diode in the optical pickup unit may be damaged due to electrostatic discharge generating from clothes or human body. Special care must be taken avoid caution to electrostatic discharge damage when servicing the laser diode.

1. Do not give a considerable shock to the optical pickup unit as it has an extremely high-precise structure.

2. **To prevent the laser diode from the electrostatic discharge damage, the flexible cable of the optical pickup unit removed should be short-circuited with a short pin or a clip.**
3. **The flexible cable may be cut off if an excessive force is applied to it. Use caution when handling the flexible cable.**
4. **The antistatic FPC is connected to the new optical pickup unit. After replacing the optical pickup unit and connecting the flexible cable, cut off the antistatic FPC.**





Clip or Short pin

6.2. Grounding for electrostatic breakdown prevention

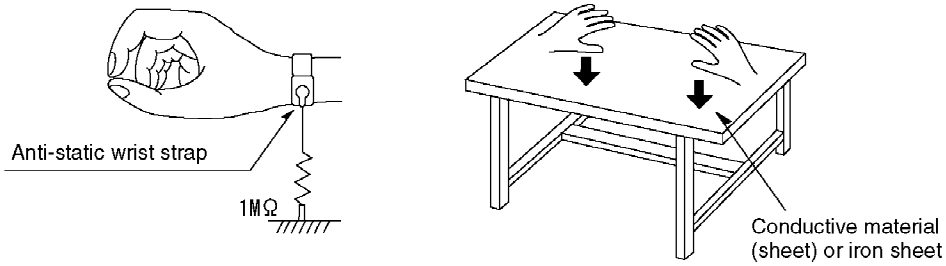
Some devices such as the DVD player use the optical pickup (laser diode) and the optical pickup will be damaged by static electricity in the working environment. Proceed servicing works under the working environment where grounding works is completed.

6.2.1. Worktable grounding

1. Put a conductive material (sheet) or iron sheet on the area where the optical pickup is placed, and ground the sheet.

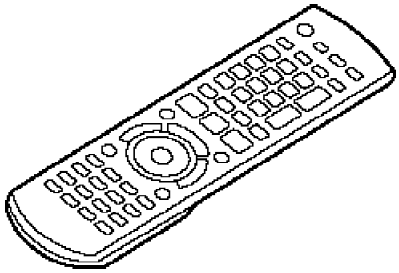
6.2.2. Human body grounding

1. Use the anti-static wrist strap to discharge the static electricity form your body.



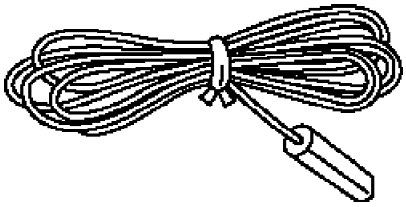
7. Accessories

Remote control

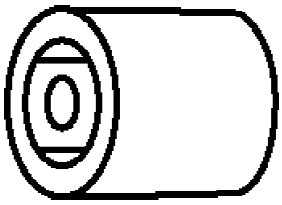


AM loop antenna

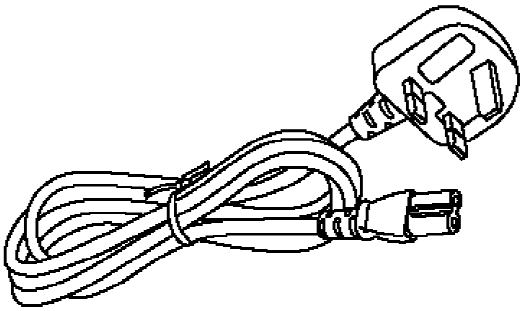
FM indoor antenna



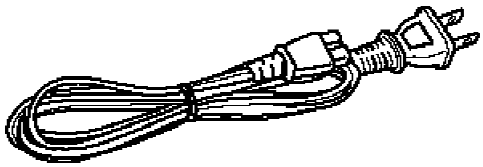
Din adaptor / (For EB area)



AC cord / (For EB area)

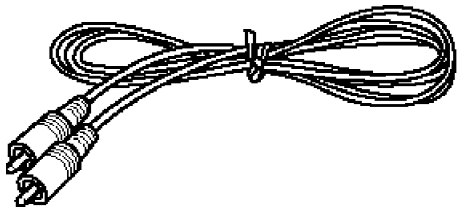


AC cord / (For E, EG areas)

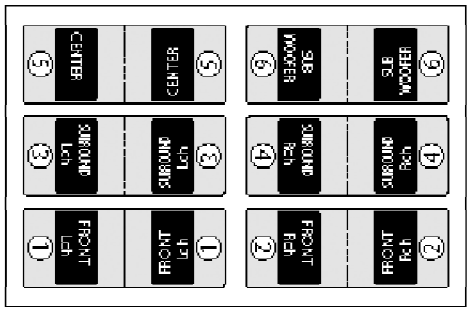


Speaker cable

Video cable / (For E, EG areas)



Speaker label



8. Operation Procedures

8.1. Remote Control Keys Operation

8.2. Main Unit Keys Operation

8.3. Disc information

8.3.1. DISC playability (Media)

8.3.2. File Extension Type Support (WMA/JPEG/MP3)

8.4. About DivX VOD Content

9. Self-Diagnosis and special mode setting

9.1. Service Mode Summary Table

The service modes can be activated by pressing various button combination on the player and remote control unit.
Below is the summary of major checking:

Player buttons	Remote control unit buttons	Application	N
STOP	0	Error code display	(Refer tc section, Self Dia Functio Code").
	5	Jitter checking	(Refer tc section Service Table 1 f informat
	6	Region display and mode	(Refer tc section Service Table 1 f informat
	7	Micro-processor firmware version check	
	FUNCTIONS	DVD laser drive current check	(Refer tc "9.2.1. C -up Self- ").
	3	CD laser drive current check	
	PAUSE	Writing of laser drive current value after replacement of optical pickup (Do use this function only when optical pickup is replaced.)	
	≧10	Initialization of the player (factory setting is restored.) Used after replacement of micro-computer, FLASH ROM IC, EEPROM and HDMI module.	(Refer tc section Service Table 1 f informat
	ENTER	DVD module reset	(Refer tc section Service Table 1 f informat

9.2. Service Mode Table 1

By pressing various button combinations on the player and remote control unit can activate the various service modes for checking.

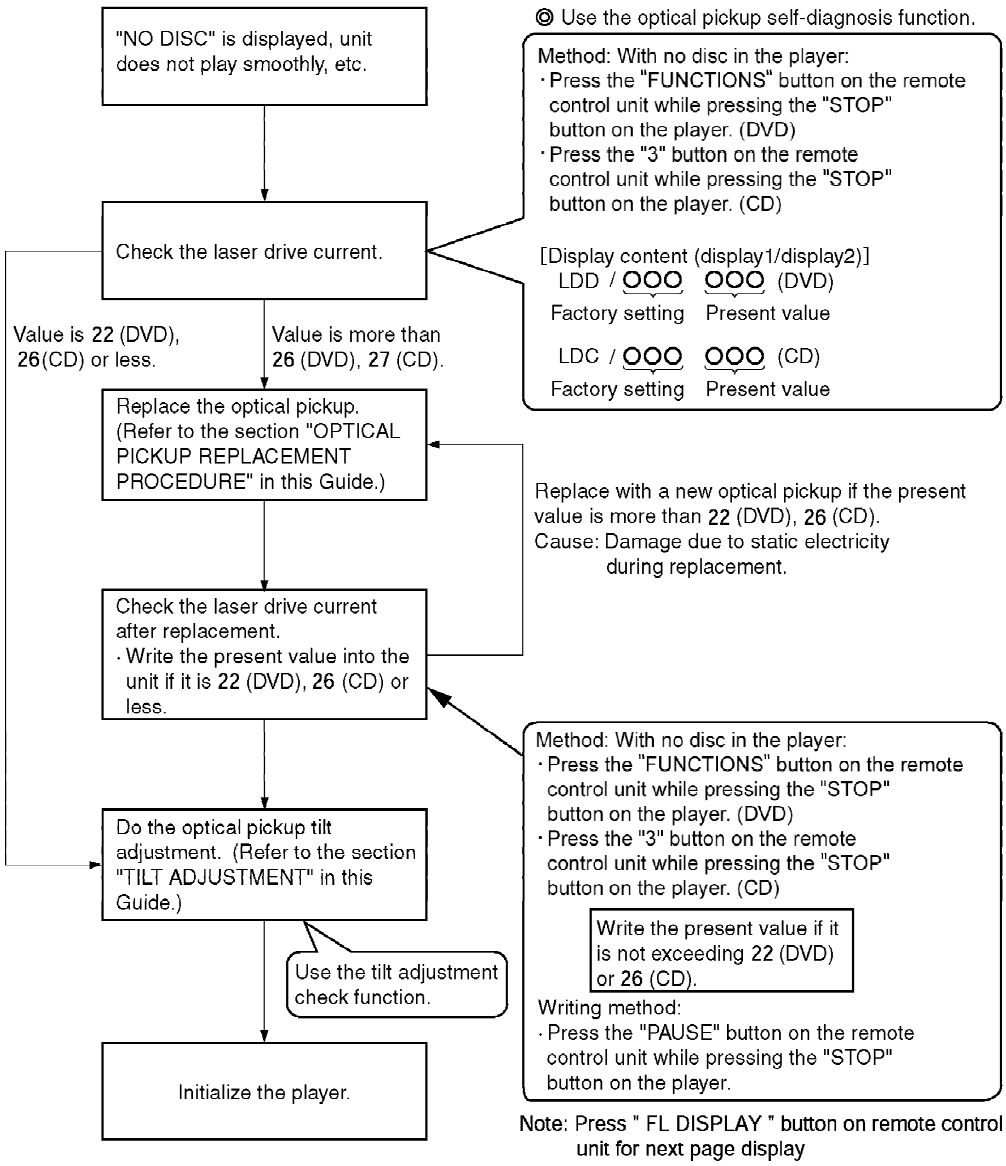
Special Note:
Due to the limitations of the no. characters that can be shown on FL Display, the "FL Display" button on the remote control uni is used to show the following page. (Display 1/Display 2).

9.2.1. Optical Pick-up Self-Diagnosis

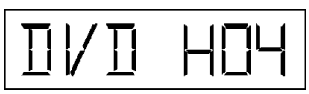
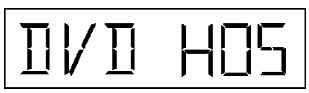
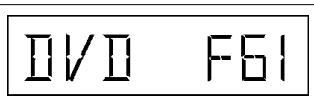
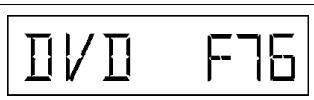
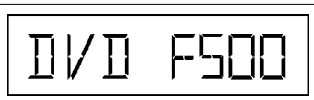
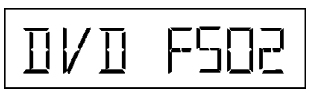
The optical pickup self-diagnosis function and tilt adjustment check function have been included in this unit. When repairing, use the following procedure for effective self-diagnosis and tilt adjustment. Be sure to use the self-diagnosis function before replacing the optical pickup when "NO DISC" is displayed. As a guideline, you should replace the optical pickup

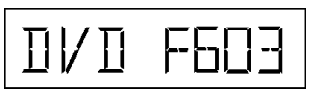
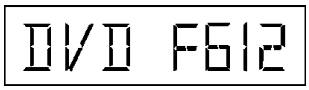
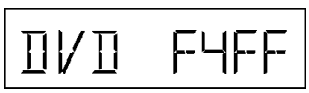
when the value of the laser drive current is more than 55.

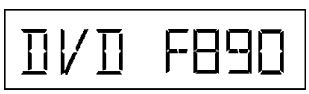
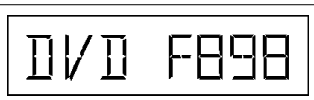
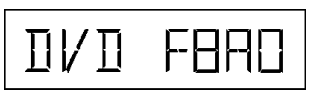
Note:
Press the power button to turn on the power, and check the value within three minutes before the unit warms up. (Otherwise, the result will be incorrect.)


"NO DISC" is displayed, unit does not play smoothly, etc.
Check the laser drive current.
Value is 22 (DVD), 26(CD) or less.
Value is more than 26 (DVD), 27 (CD).
Replace the optical pickup. (Refer to the section "OPTICAL PICKUP REPLACEMENT PROCEDURE" in this Guide.)
Check the laser drive current after replacement.
· Write the present value into the unit if it is 22 (DVD), 26 (CD) or less.
Do the optical pickup tilt adjustment. (Refer to the section "TILT ADJUSTMENT" in this Guide.)
Use the tilt adjustment check function.
Initialize the player.
◎ Use the optical pickup self-diagnosis function.
Method: With no disc in the player:
· Press the "FUNCTIONS" button on the remote control unit while pressing the "STOP" button on the player. (DVD)
· Press the "3" button on the remote control unit while pressing the "STOP" button on the player. (CD)
[Display content (display1/display2)]
LDD / OOO OOO (DVD)
Factory setting Present value
LDC / OOO OOO (CD)
Factory setting Present value
Replace with a new optical pickup if the present value is more than 22 (DVD), 26 (CD).
Cause: Damage due to static electricity during replacement.
Method: With no disc in the player:
· Press the "FUNCTIONS" button on the remote control unit while pressing the "STOP" button on the player. (DVD)
· Press the "3" button on the remote control unit while pressing the "STOP" button on the player. (CD)
Write the present value if it is not exceeding 22 (DVD) or 26 (CD).
Writing method:
· Press the "PAUSE" button on the remote control unit while pressing the "STOP" button on the player.
Note: Press " FL DISPLAY " button on remote control unit for next page display

9.3. DVD Self Diagnostic Function-Error Code

Error Code	Diagnosis Contents	Description of error	Automatic FL Display	Remark
U11	Focus servo error	Focus coil NG (OPU unit abnormal)		Press [■ ST on main unit t next error.
H01	Tray loading error / abnormality	The tray is not able to open		Press [■ ST on main unit t next error
H02	Spindle servo error, DSC disc motor error	(Spindle servo, DSC (IC8251) Spindle motor, CLV servo error)		Press [■ ST on main unit t next error
H03	Traverse motor error	(Traverse motor, IC8251)		Press [■ ST on main unit t next error
H04	Tracking servo error	Tracking coil NG (OPU unit abmormal)		Press [■ ST on main unit t next error
H05	Seek timeout error	Timeout of unit when seeking time is reached		Press [■ ST on main unit t next error
H15	Disc tray open detection switch (S9001) failure	The disc tray cannot be opened: it closes spontaneously		Press [■ ST on main unit t next error
H16	Disc tray close detection switch (S9001) failure	The disc tray cannot be closed: it opens spontaneously		Press [■ ST on main unit t next error
F61	Power digital amp IC op & DC output voltage abnormal.	Upon power-on PCONT= High, DCDET=Low		Press [■ ST on main unit t next error
F76	Power digital amp IC op & DC output voltage abnormal.	Speaker Jack shorted or amp circuit		Press [■ ST on main unit t next error
F500	DSC error	DSC (IC8251) stops in the occurrence of servo error (startup, focus error, etc.)		Press [■ ST on main unit t next error
F501	DSC not Ready error	DSC-system computer communication error (Communication failure caused by idling of DSC)		Press [■ ST on main unit t next error
F502	DSC Time out error	Similar as F500		Press [■ ST on main unit t next error
F503	DSC communication Failure	Communication error (result error occurred although communication command was sent)		Press [■ ST on main unit t next error

Error Code	Diagnosis Contents	Description of error	Automatic FL Display	Remark
F504	Abnormal adjusting DSC data slice offset			Press [■ ST on main unit f next error
F505	DSC Attention error	Similar as F500		Press [■ ST on main unit f next error
F506	Invalid media	Disc is flipped over, TOC unreadable, incompatible disc media		Press [■ ST on main unit f next error
F600	Access failure to management information caused by demodulation error	Operation stopped because navigation data is not accessible caused by the demodulation defect		Press [■ ST on main unit f next error
F601	Indeterminate sector ID requested	Operation stopped caused by the request to access abnormal ID data		Press [■ ST on main unit f next error
F602	Access failure to LEAD-IN caused by demodulation error	LEAD IN data unreadable		Press [■ ST on main unit f next error
F603	Access failure to KEYDET caused by demodulation error	Access failure to CSS data of disc		Press [■ ST on main unit f next error
F610	ODC abnormality	No permission for command execution		Press [■ ST on main unit f next error
F611	No CRC OK for a specific time (CD)	Access failure to seek address in CD series		Press [■ ST on main unit f next error
F612	No CRC OK for a specific time (DVD)	Access failure to ID data in DVD series		Press [■ ST on main unit f next error
F620	Laser safeguard: high temperature condition	High temperature of the laser guide unit (OPU unit)		Press [■ ST on main unit f next error
F621	Laser safeguard: circuit failure condition	Circuitry failure of the laser guide unit (OPU unit)		Press [■ ST on main unit f next error
F103	Illegal highlight Position	Big possibility of disc specification violation during highlight display		Press [■ ST on main unit f next error
F4FF	Force initialize failure (time out)	Timeout when force initialization fails		Press [■ ST on main unit f next error

Error Code	Diagnosis Contents	Description of error	Automatic FL Display	Remark
F700	MBX overflow	When replying message to disc manager		Press [■ ST on main unit f next error
F701	Message command does not end	Next message is sent before replying to disc manager		Press [■ ST on main unit f next error
F702	Message command changes	Message is changed before it is sent as a reply to disc manager		Press [■ ST on main unit f next error
F880	Task number is not appropriate	Message coming from a non-existing task		Press [■ ST on main unit f next error
F890	Sending message when message is being sent to AV task	Sending message to AV task		Press [■ ST on main unit f next error
F891	Message couldn't be sent to AV task	Begin sending message to AV task		Press [■ ST on main unit f next error
F893	FLASH ROM IC problem	FLASH ROM IC installed is not operating properly (Neccessary replacement of FLASH ROM IC) or firmware problem		Press [■ ST on main unit f next error
F894	EEPROM abnormality	EEPROM IC installed is not operating in normal condition (EEPROM contains neccessary data)		Press [■ ST on main unit f next error
F895	Region setting abnormality	Firm version agreement check for factory preset setting failure prevention. Check region setting & re-initialize		Press [■ ST on main unit f next error
F896	No existence model	Firm version agreement check for factory preset setting failure prevention		Press [■ ST on main unit f next error
F897	Initialize is not completed	Initialize completion check for factory preset setting failure prevention		Press [■ ST on main unit f next error
F898	Disagreement of hardware and software	Unsuitable combination of AV DECORDER, SDRAM and FLASH ROM (firmware)		Press [■ ST on main unit f next error
F8A0	Message command is not appropriate	Begin sending message to AV task		Press [■ ST on main unit f next error

Note:

An error code will be canceled if a power supply is turned OFF.

***1: CPPM is the copy guard function beforehand written in the disk for protection of copyrights.**

***2: CEC is the consumer electronic control used for high-level user control of HDMI-connected devices.**

***3: HDCP is the specification developed to control digital audio & video contents transmission for DVI or HDMI connections.**

9.4. Sales Demonstration Lock Function

This function prevents discs from being lost when the unit is used for sales demonstrations by disabling the disc eject function. "LOCKED" is displayed on the unit, and ordinary operation is disabled.

9.4.1. Setting

- Prohibiting removal of disc

1. **Select the DVD/CD function.**
2. **Press and hold down the ■ button and the power button on the player for at least three seconds. (The message, "___LOCKED_" appears when the function is activated.)**

Note:

OPEN/CLOSE ⏏, DISC CHECK and DISC CHANGE buttons are invalid and the player displays "___LOCKED_" while the lock function mode is entered.

- Prohibiting operation of selector and disk

1. **Select the DVD/CD function.**
2. **Press and hold down the ▶ button and the power button on the player for at least three seconds. (The message, "___LOCKED_" appears when the function is activated.)**

Note:

The following buttons are invalid and the player displays "___LOCKED_" while the lock function mode is entered.

Player	⏏, ■, ⏸, SELECTOR, ⏭, ⏮, VOLUME KNOB, DISC CHECK, DISC CHANGE, DISC1-DISC5
Remote controller unit	SLEEP, REPEAT, 0~9, ≧10, RETURN, TOP MENU, ■, ⏸, ⏮, ⏭, ◀◀, ▶▶, POSITION MEMORY, TUNER/BAND, D.MIX, CH SELECT/ TEST, SET UP/ MUTING, DISPLAY, GROUP, TV, VCR/ AUX, QUICK REPLAY, SUBTITLE, FL DISPLAY, CH & VOLUME

9.4.2. Cancellation

The lock can be cancelled by the same procedure as used in setting. ("UNLOCK" is displayed on cancellation. Disconnecting the power cable from power outlet does not cancel the lock.)

9.5. Service Precautions

9.5.1. Recovery after the DVD player is repaired

- When the IC or HDMI module P.C.B. is replaced, carry out the recovery processing to optimize the drive.
Playback the recovery disk to process the recovery automatically.
- Recovery disc (Product number: RFKZD03R005)
- Performing recovery process
1. Load the recovery disc RFKZD03R005 on to the player and run it.
2. Recovery is performed automatically. When it is finished, a message appears on the screen.
3. Remove the recovery disc.
4. Turn off the power.
5. Initialize the player.

9.5.2. Firmware version-up of the DVD player

- The firmware of the DVD player may be renewed to improve the quality including operability and playability to the substandard discs.processing to optimize the drive.
The recovery disc has also firmware version-up.
- After version-up, recovery processing is executed automatically.
- Part number of the recovery disc for version-up will be noticed when it is supplied.
- Updating firmware
1. Load the recovery disc on to the player and run it.
2. Firmware version of the player is automatically checked. Appropriate message appears whenever necessary.
3. Using remote controller's cursor key, select whether version

updating is to be done or not. (Selection of Yes/No)

4. a. If Yes is selected, version updating is performed.
   b. If No is selected, only recovery is performed.
5. a. When updating is finished, remove the disc according to the message appearing on the screen.
   b. Remove the disc according to the message appearing on the screen.
6. Turn off the power.

Note:
If the AC power supply is shut out during version-up due to a power failure, the version-up is improperly carried out.
In such a case, replace the FLASH ROM IC and carry out the version-up again.

9.5.3. DVD Module Reset

- When after replacing Flash Rom IC or the DVD Module P.C.B., FL displays error code " DVD F897". This means the unit is not initialized properly and the following process needs to be carry out.
- Procedures:

1. Press ≧10 on remote control while pressing "STOP" button on main unit.
2. FL display show " INIT"
3. While still pressing "STOP" button on main unit, press "ENTER" on remote control.
4. FL will display "DVD RESET" before FL display will change to TOC reading again.
5. Power off unit. Unplug the AC cord.
6. Power on the unit. It should be no problem. If problem persist check on the DVD module P.C.B. or FLASH ROM IC.

10. Assembling and Disassembling

"ATTENTION SERVICER"

Be careful when disassembling and servicing.
Some chassis components may have sharp edges.
Special Note:

1. This section describes the disassembly procedures for all the

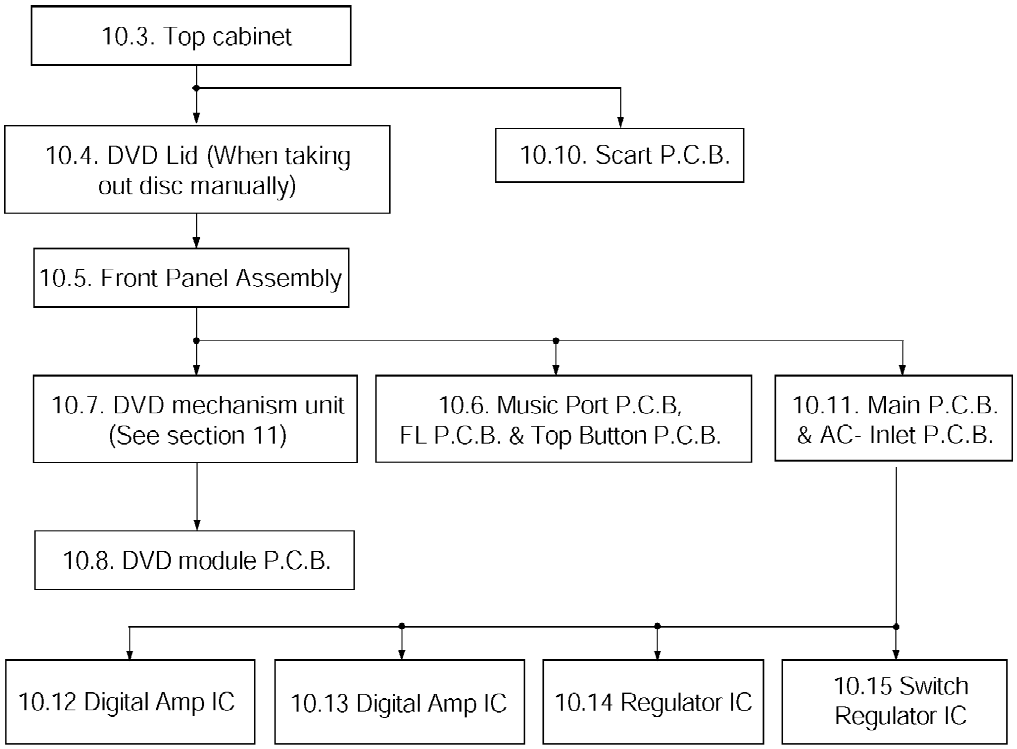
major printed circuit boards and main components.

2. **Before the disassembly process was carried out, do take special note that all safety precautions are to be carried out.**
   (Ensure that no AC power supply is connected during disassembling.)
3. **For assembly after operation checks or replacement, reverse the respective procedures.**
   Special reassembly procedures are described only when required.
4. **The Switch Regulator IC may have high temperature after prolonged use.**
   Use caution when removing the top cabinet and avoid touching heat sinks located in the unit.
5. **Select items from the following index when checks or replacement are required.**

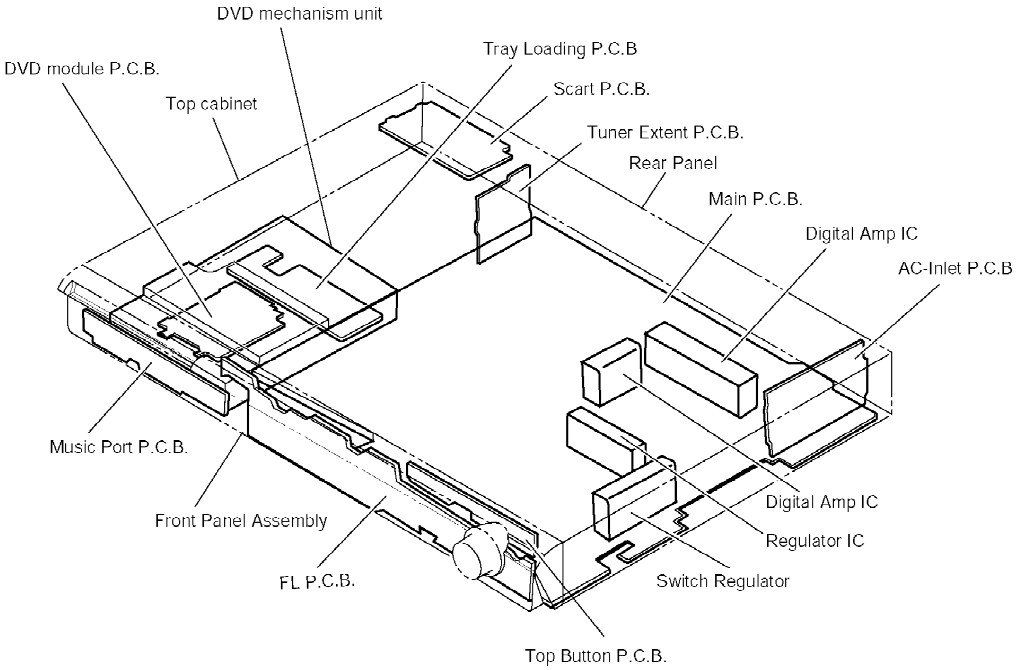
- **Disassembliy of Top Cabinet**
- **Disassembly of DVD Lid (When taking out disc manually)**
- **Disassembly of Front Panel**
- **Disassembly of Music Port P.C.B., FL P.C.B. & Top Button P.C.B.**
- **Disassembly of Mechanism Unit**
- **Disassembly of DVD Module P.C.B.**
- **Disassembly of Rear panel**
- **Disassembly of Scart P.C.B.**
- **Disassembly of Main P.C.B. & AC-Inlet P.C.B.**
- **Disassembly of Digital Amp IC**
- **Disassembly of Digital Amp IC(IC5400)**
- **Disassembly of Regulator IC**
- **Disassembly of Switch Regulator IC(IC5701)**

CAUTION NOTE:
Please use original screw and at correct locations.

10.1. Disassembly Flow Chart

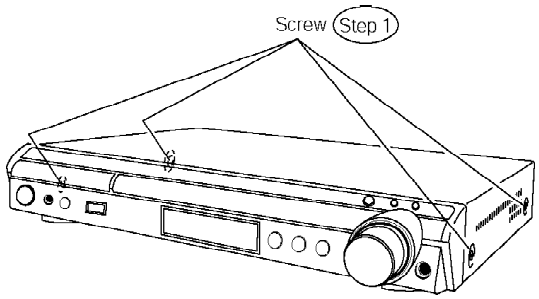

10.3. Top cabinet
10.4. DVD Lid (When taking out disc manually)
10.10. Scart P.C.B.
10.5. Front Panel Assembly
10.7. DVD mechanism unit (See section 11)
10.6. Music Port P.C.B, FL P.C.B. & Top Button P.C.B.
10.11. Main P.C.B. & AC- Inlet P.C.B.
10.8. DVD module P.C.B.
10.12 Digital Amp IC
10.13 Digital Amp IC
10.14 Regulator IC
10.15 Switch Regulator IC

10.2. Main Components and P.C.B. Locations

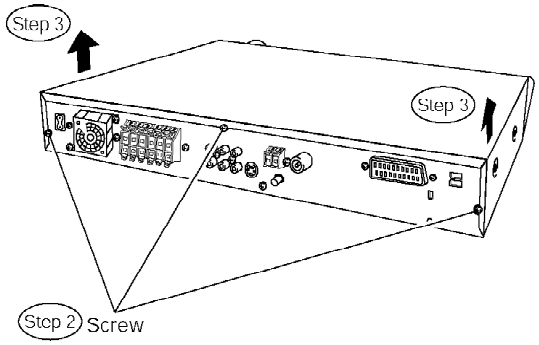


10.3. Disassembly of Top Cabinet

Step 1 Remove 4 screws.

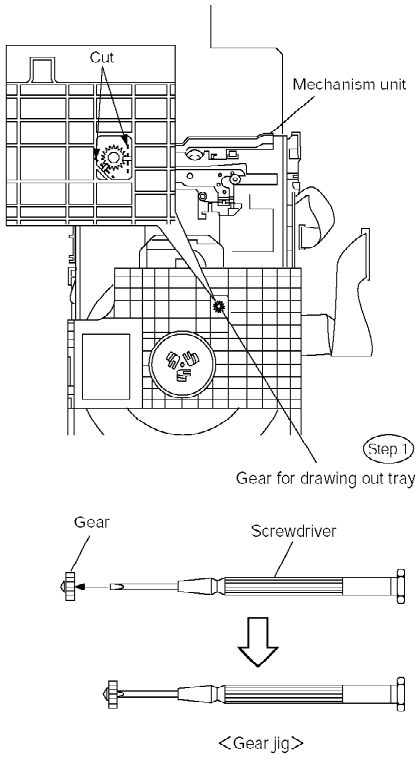


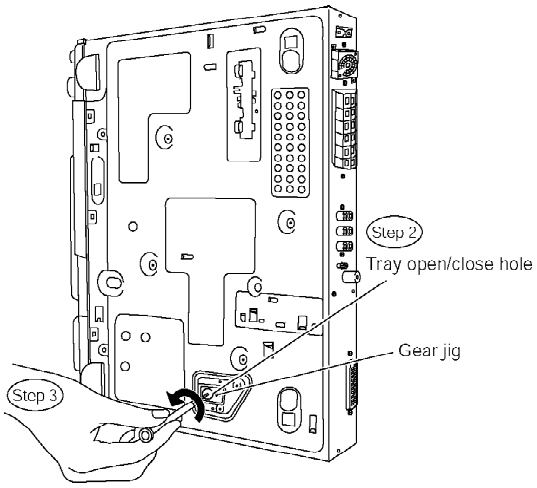
Step 2 Remove 3 screws. (Rear view)
Step 3 Lift up and remove the top cabinet.



10.4. Disassembly of the DVD Lid (When taking out disc manually)

Step 1 Detach the gear for drawing out tray from the mechanism unit. It inserts a screw driver in the gear. (The gear jig)
Step 2 Insert the gear jig into the tray open/ close hole.
Step 3 Turn the gear jig counterclockwise to open the tray.
Note : Do not use force to push the tray backwards as it can damage the mechanism unit.
Step 4 Turn the gear jig clockwise to return tray.





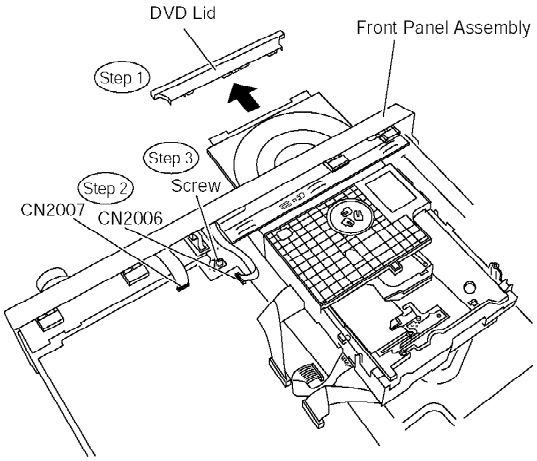
10.5. Disassembly of Front Panel Assembly

- Follow the Item 10.3.

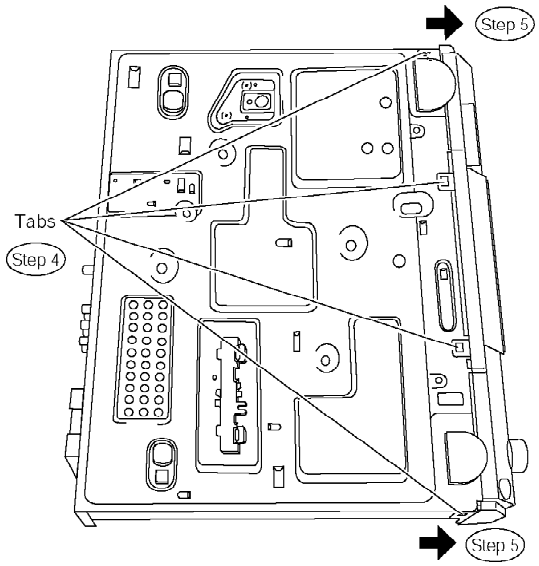
Step 1 Remove the DVD lid.

Step 2 Detach FFC cables at connectors. (CN2006, CN2007)

Step 3 Remove 1 screw.



Step 4 Release the tabs.

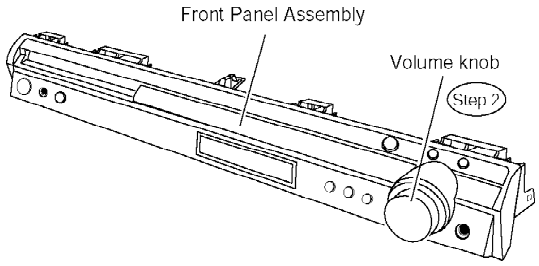


Step 5 Detach the front panel assembly.
Special Note: Avoid placing the set in a position that might cause damage to the jacks when removing the front panel assembly.

10.6. Disassembly of Music Port P.C.B, FL P.C.B. & Top Button P.C.B.

- Follow the Item 10.5.

Step 1 Remove DVD lid.
Step 2 Remove the volume knob.

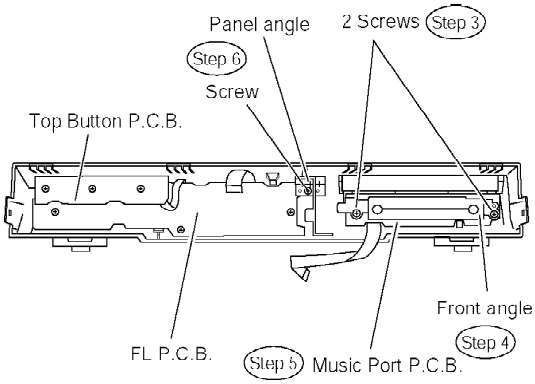


- Disassembly of Music Port P.C.B.

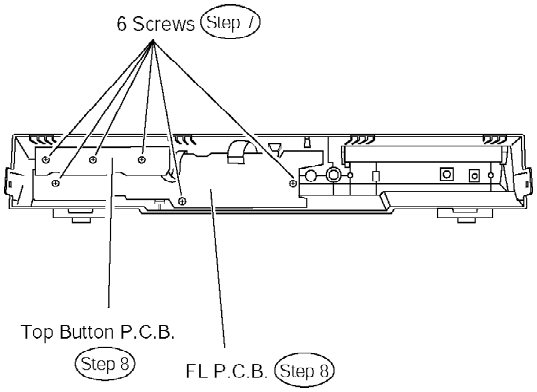
Step 3 Remove 2 screws.
Step 4 Remove the front angle.
Step 5 Remove Music Port P.C.B.

- Disassembly of Top Button P.C.B.

Step 6 Remove 1 screw and the panel angle.



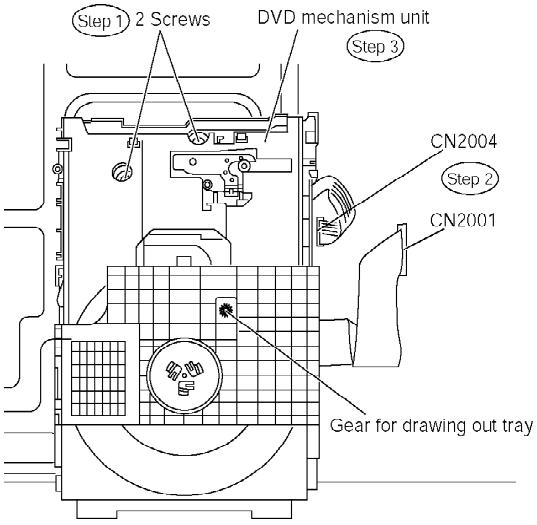
Step 7 Remove 6 screws.
Step 8 Remove FL P.C.B. &/or Top Button P.C.B.



10.7. Disassembly of DVD Mechanism Unit

- Follow the Item 10.3.
- Follow (Step 1) of Item 10.5.

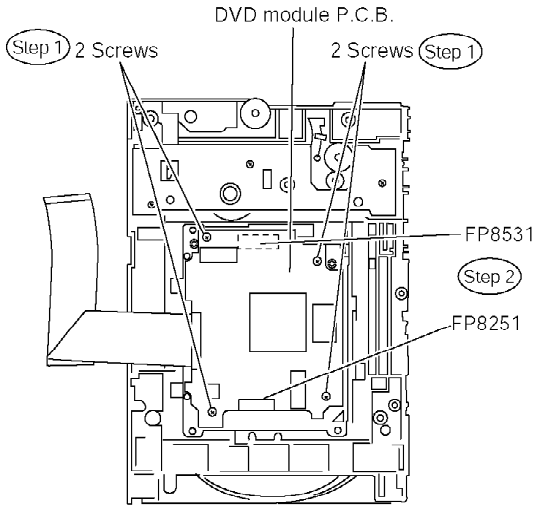
Step 1 Remove 2 screws.
Step 2 Detach FFC cables at connectors. (CN2004, CN2001).
Step 3 Lift up the mechanism unit vertically to remove it.



10.8. Disassembly of DVD Module P.C.B.

- Follow the Item 10.7.

Step 1 Remove 4 screws.
Step 2 Detach FFC cables at the connectors.(FP8251, FP8531)



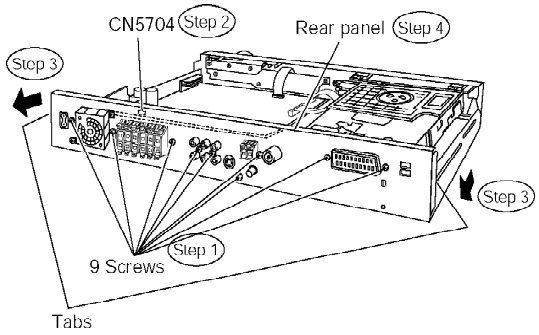
<Mechanism unit bottom>

Caution: Do not apply or exert excessive force when detaching the FFC cables.

10.9. Disassembly of Rear panel

- Follow the Item 10.3.

Step 1 Remove 9 screws.
Step 2 Detach connector(CN5704) at fan unit.
Step 3 Release the tabs.
Step 4 Remove the rear panel.

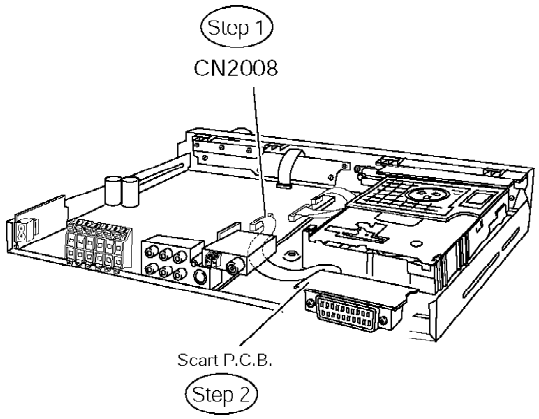


10.10. Disassembly of Scart P.C.B.

- Follow the Item 10.3.

- Follow the Item 10.9.

Step 1 Detach FFC cable at connector. (CN2008)
Step 2 Remove Scart P.C.B.



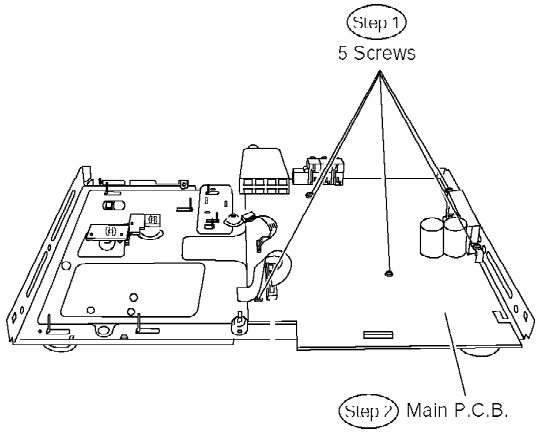
10.11. Disassembly of Main P.C.B.

- Follow the Item 10.7.

- Follow the (Step 1) of Item 10.10.

Step 1 Remove 5 screws.

Step 2 Lift up and remove Main P.C.B.



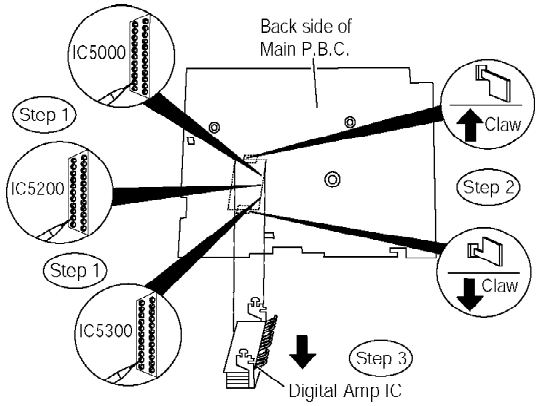
10.12. Disassembly of Digital Amp IC

- Follow (Step 1) to (Step 2) of Item 10.11.

Step 1 Desolder all IC5000, IC5200, IC5300 pins.

Step 2 Release the claws.

Step 3 Remove the D. Amp IC (IC5400).

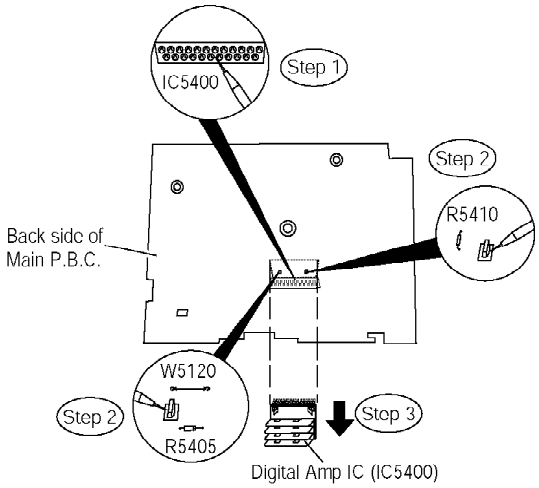


Note: Refer to the diagrams of Power P.C.B. (Section 19.2) for location of the parts.

10.13. Disassembly of Digital Amp IC (IC5400)

- Follow (Step 1) to (Step 2) of Item 10.11.

Step 1 Desolder all pins of IC5400.
Step 2 Desolder 2 pins of Heat Sink B.
Step 3 Remove the Digital Amp IC (IC5400).

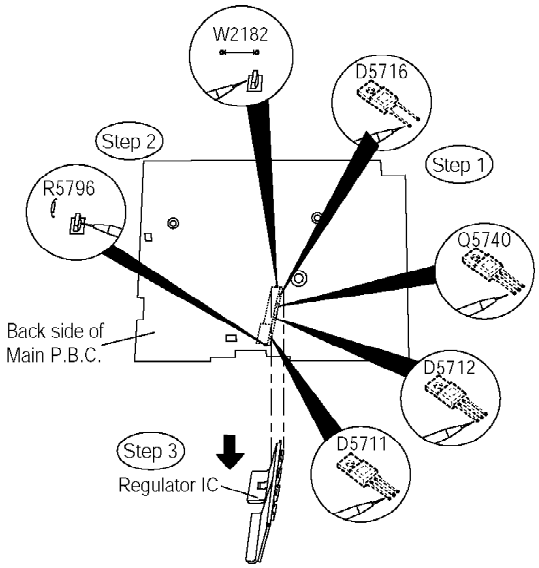


Note: Refer to the diagrams of Power P.C.B. (Section 19.2) for location of the parts.

10.14. Disassembly of Regulator IC

- Follow (Step 1) to (Step 2) of Item 10.11.

Step 1 Desolder all pins of D5711, D5716, D5717, D5718.
Step 2 Desolder 2 pins of Regulator IC.
Step 3 Remove the Regulator IC.



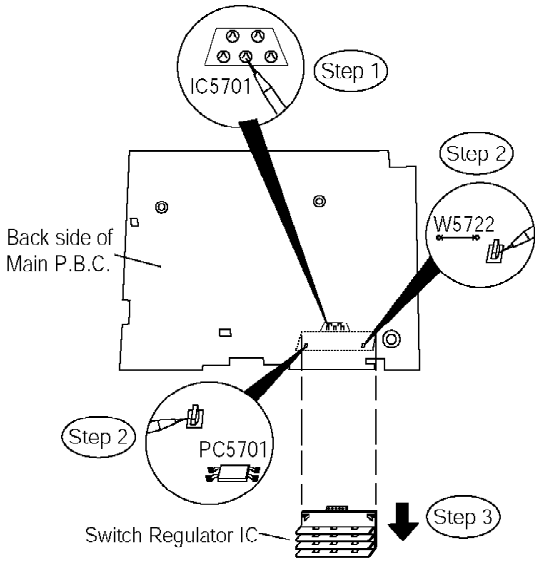
Note: Refer to the diagrams of Power P.C.B. (Section 19.2) for location of the parts.

10.15. Disassembly of Switch Regulator IC (IC5701)

- Follow (Step 1) to (Step 2) of Item 10.11.

Step 1 Desolder all pins of IC5701.

Step 2 Desolder 2 pins of Switch Regulator IC.
Step 3 Remove the Switch Regulator IC.



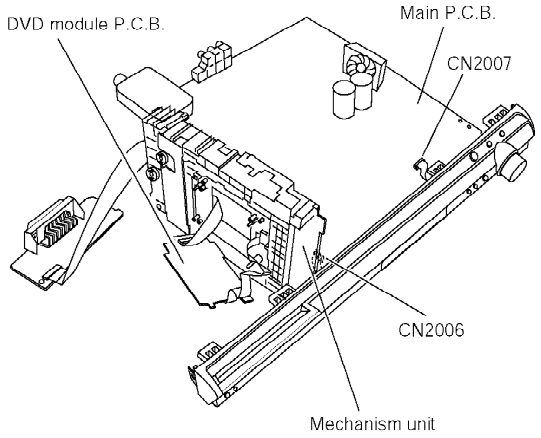
Note: Refer to the diagrams of Power P.C.B. (Section 19.2) for location of the parts.
Caution: Be careful when removing the Switch Regulator IC which has high temperature after prolonged use.

10.16. Service Position

10.16.1. Servicing position of the DVD Module P.C.B.

- Follow the Item 10.7.
- Follow the (Step 1) of Item 10.8.
- Follow the (Step 1) - (Step 2) of Item 10.9.

Step 1 Connect FFC cables at connectors. (CN2006, CN2007)
Step 2 Turn Mechanism unit to vertically position.

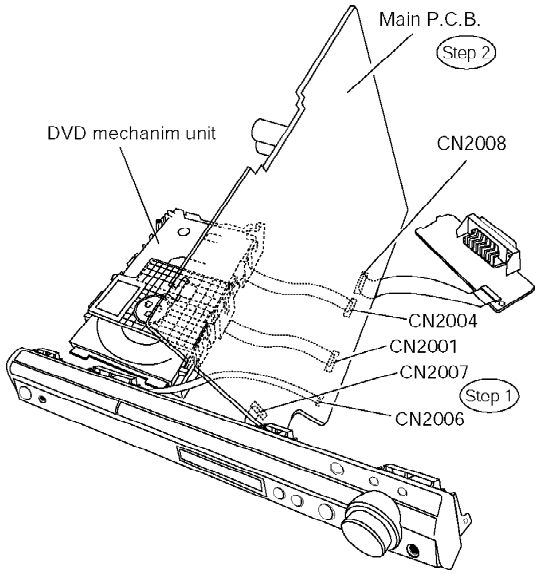


10.16.2. Servicing position of the Main P.C.B.

- Follow the Item 10.7.
- Follow the (Step 1) of Item 10.8.
- Follow the (Step 1) - (Step 2) of Item 10.9.

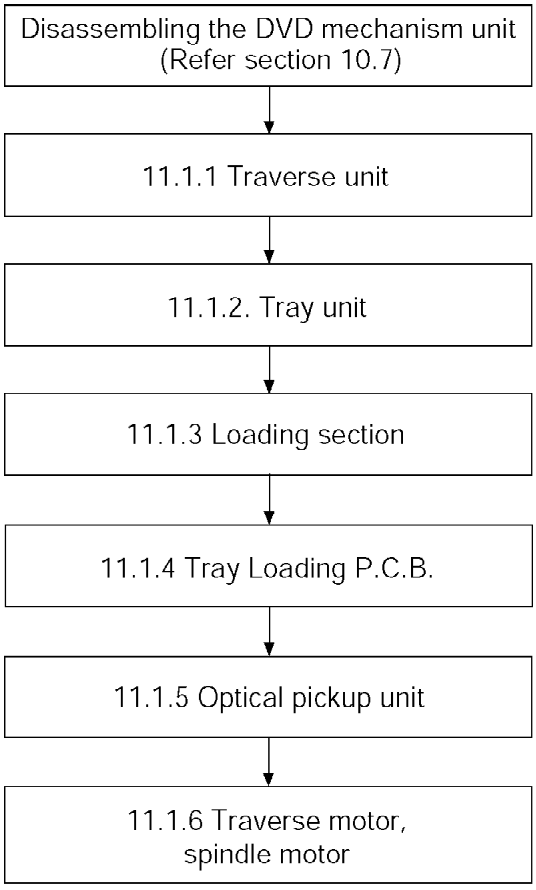
Step 1 Connect FFC cables at connectors. (CN2006 & CN2007)

Step 2 Turn Main P.C.B to vertically position.



11. Assembly and disassembly of Mechanism Unit

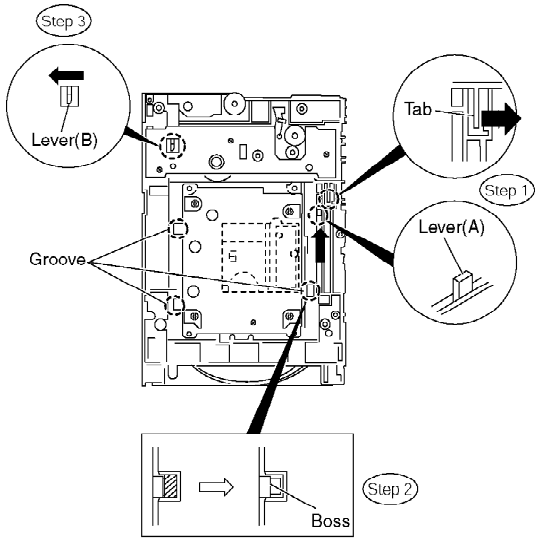
11.1. Disassembly Procedure



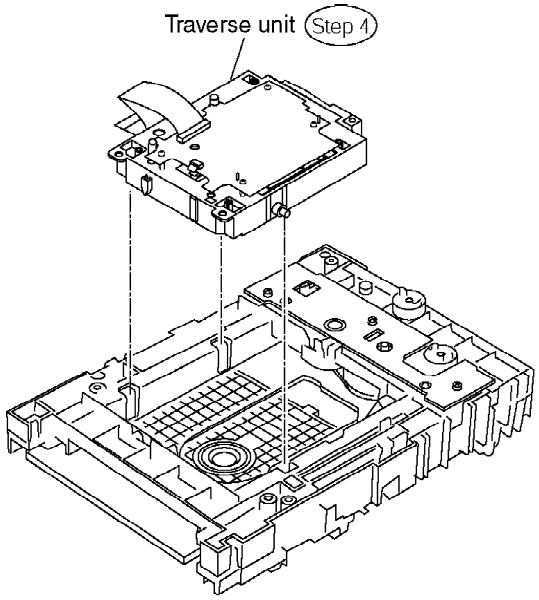
11.1.1. Disassembly of Traverse Unit

Step 1 Slide the lever (A) in the arrow direction (to the opposite side) till it stops.

Step 2 Slide the lever (A) further by bending the tab at the right side of the lever A in the right direction. (The right groove opens and the boss becomes seen.)
Step 3 Open the lever (B) to left. (The 2 grooves at the left side open.).

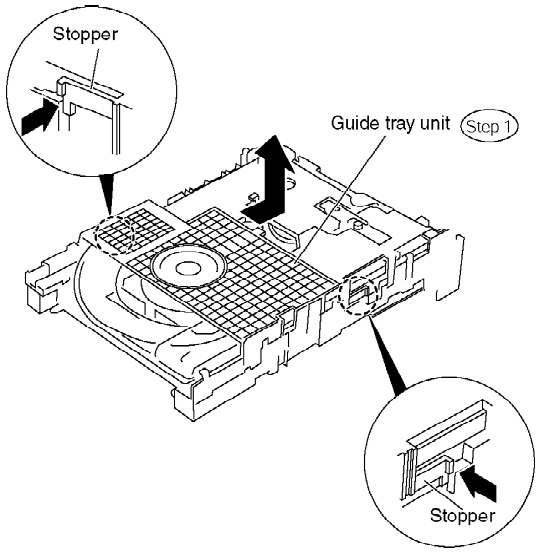


Step 4 Remove the traverse unit.

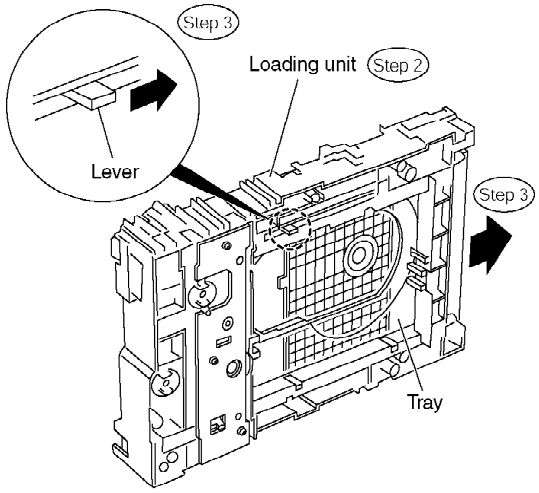


11.1.2. Disassembly of Tray Unit

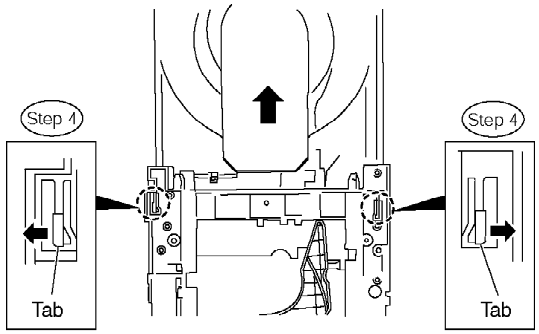
Step 1 Slide the guide tray unit while pressing the stopper in the arrow direction, and remove the guide tray unit.



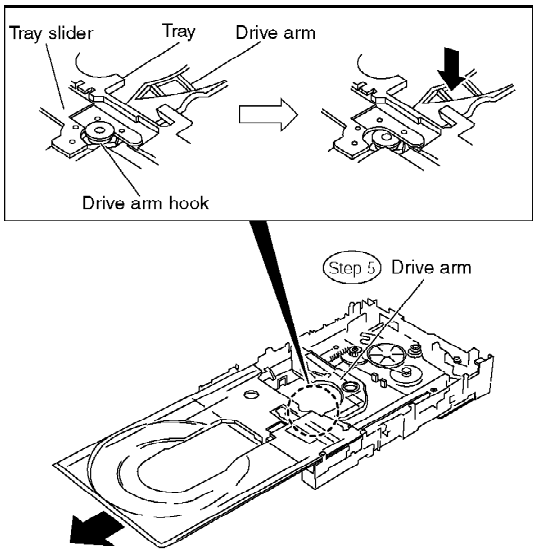
Step 2 Raise the loading unit.
Step 3 Slide the lever in the arrow direction till it stops and pull the tray out.



Step 4 Spread the tabs at the both sides and pull the tray out. (The tray slides a little forword and stops.).



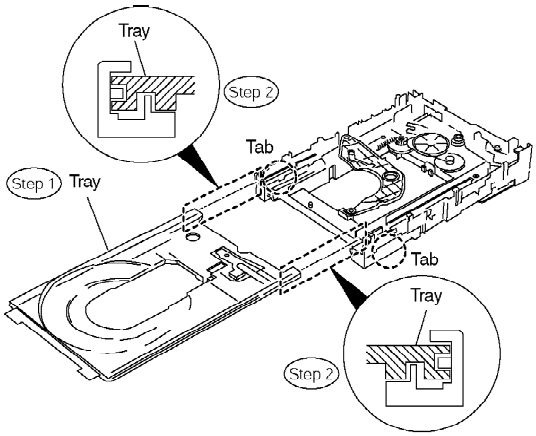
Step 5 Remove the drive arm concave phase from the tray slider and tray.



● **(Assembling the tray unit)**

Step 1 Insert a part of the tray into the unit sliding over the groove on the mechanical chassis unit.

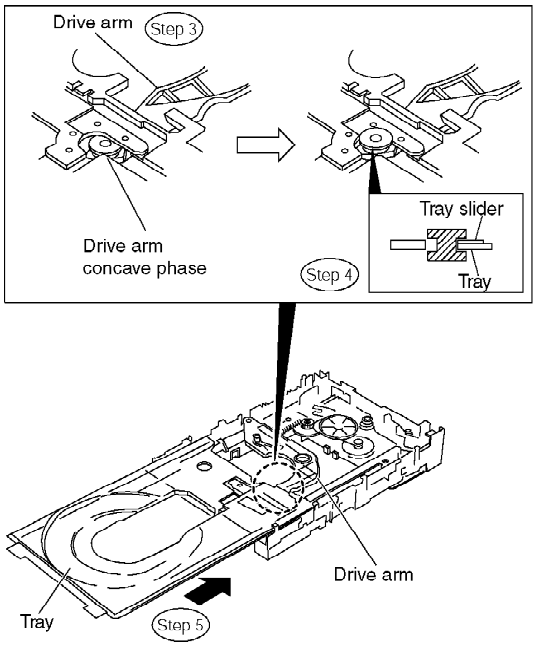
Step 2 Insert the tray to the point before the tab of the mechanical chassis unit.



Step 3 Hook the drive arm concave phase over the tray and the tray slider.

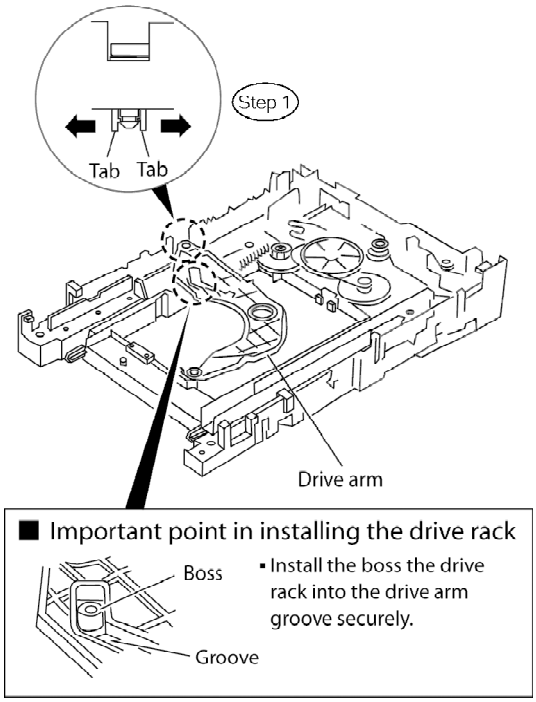
Step 4 Press in the tray.

Step 5 Make sure that the tray and the drive arm move smoothly.



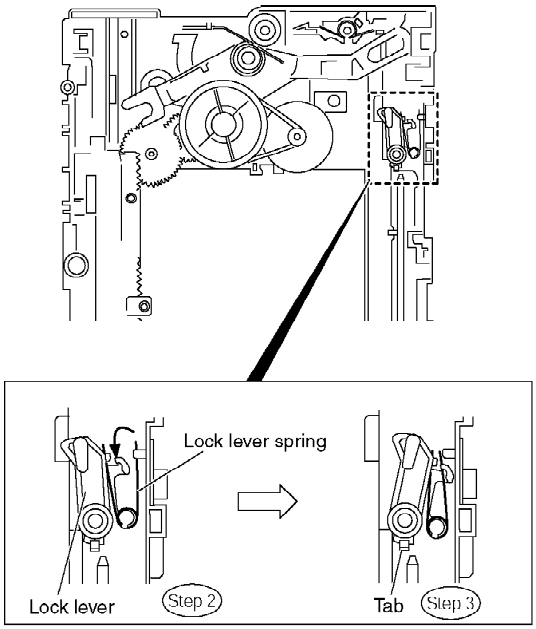
11.1.3. Disassembly of Loading section

Step 1 Spread the tabs at the both sides and push out the drive arm shaft.



Step 2 Hook the lock lever spring on the lock lever projection part temporarly.

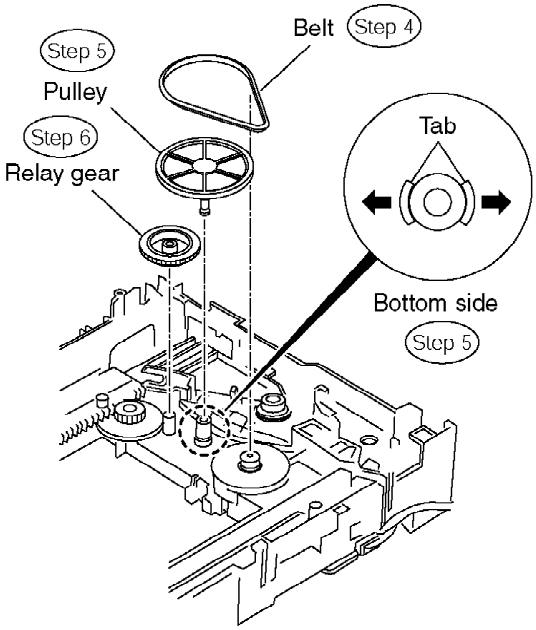
Step 3 Unlock the tab and remove the lock lever.



Step 4 Remove the belt.

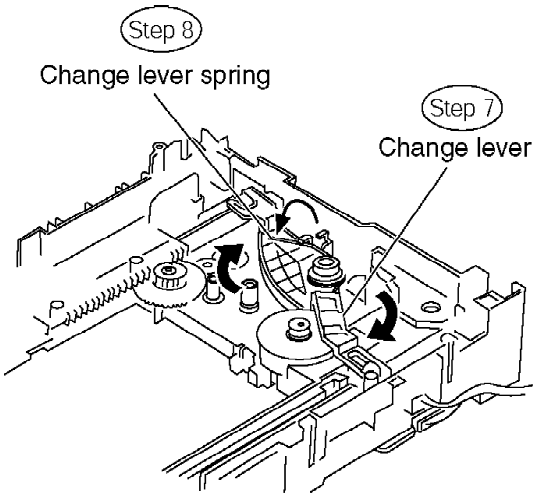
Step 5 Unlock the tab and remove the pulley.

Step 6 Remove the relay gear.

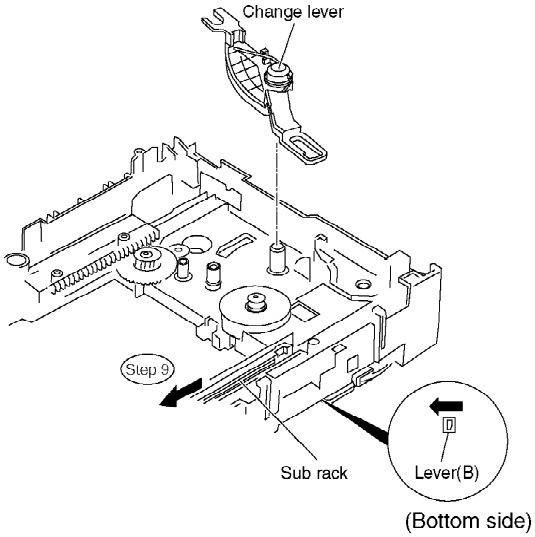


Step 7 Turn the change lever in the arrow direction till it stops.

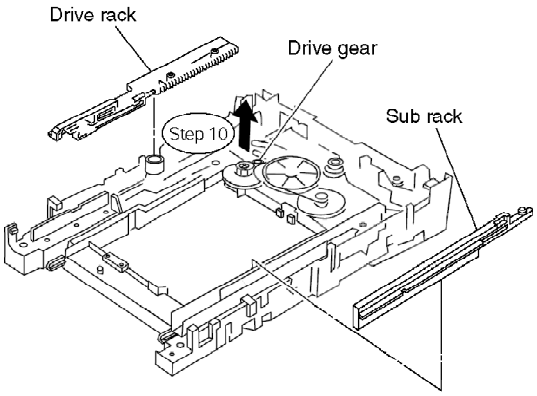
Step 8 Hook the change lever spring on the change lever project part temporarily.



Step 9 Pull the lever (B) in the bottom side to your side and remove the change lever.

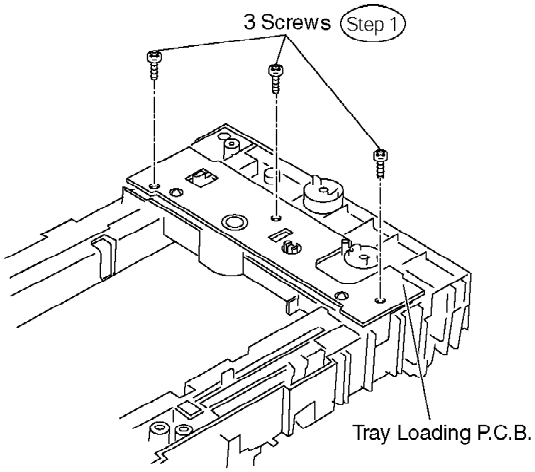


Step 10 Remove the drive rack, the sub rack and the drive gear.



11.1.4. Disassembly of Tray Loading P.C.B.

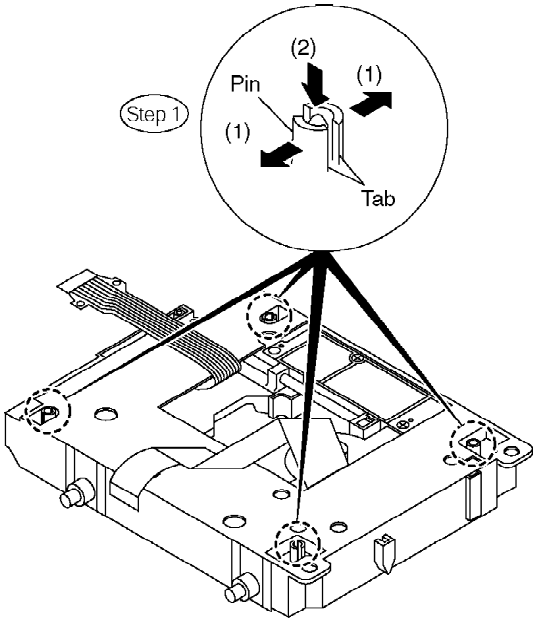
Step 1 Remove 3 screws



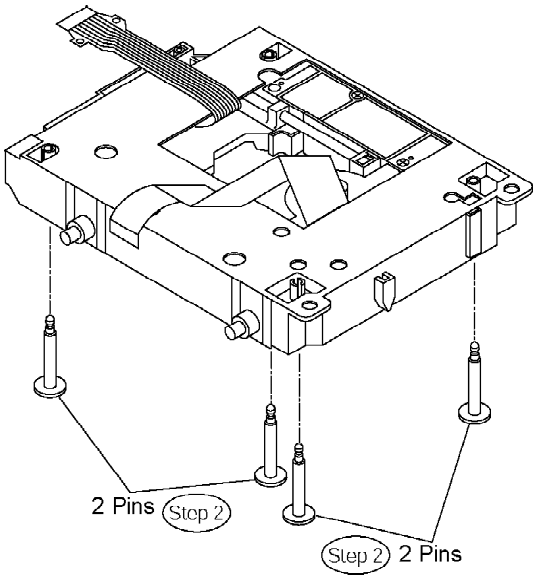
11.1.5. Disassembly of Optical Pickup Unit

Special Note: Anti-static measures are necessary due to handling of OPU unit .

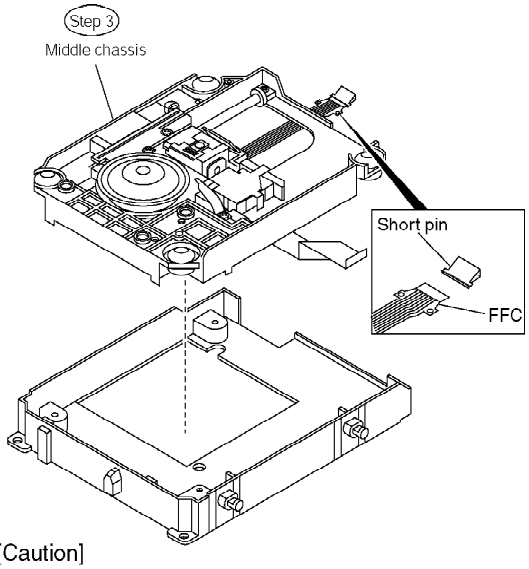
Step 1 Spread the tabs to push in the pin.



Step 2 Remove 4 pins.

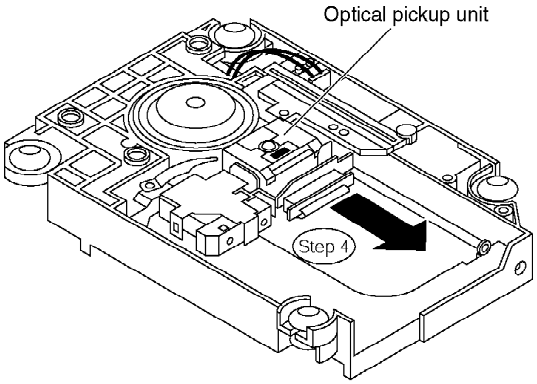


Step 3 Remove the middle chassis.

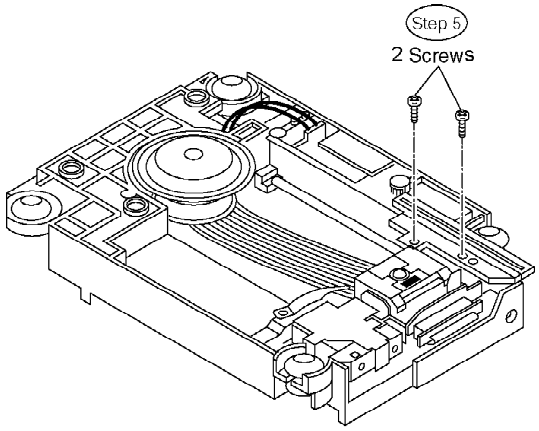


[Caution]
Insert the short pin into the FFC of the optical pickup unit. [See "Caution to be taken in handling the optical pickup unit"]

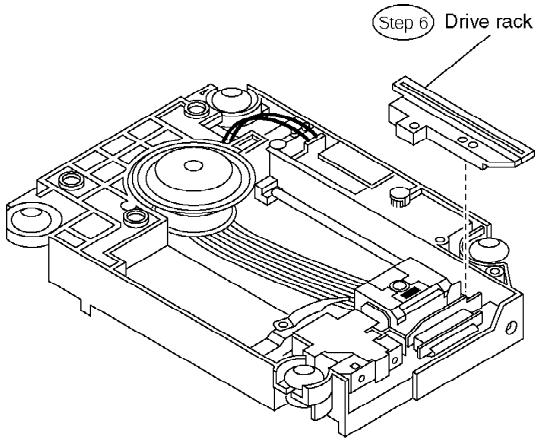
Step 4 Remove the optical pickup unit in the arrow direction till it stops.



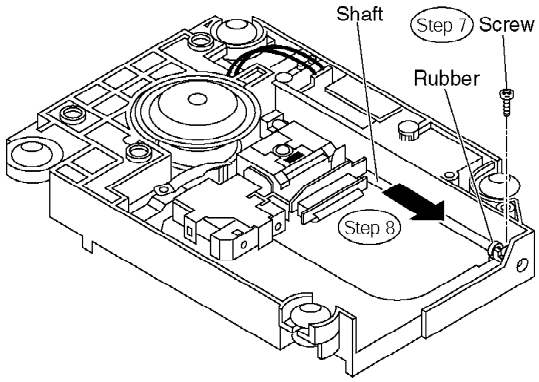
Step 5 Remove 2 screws.



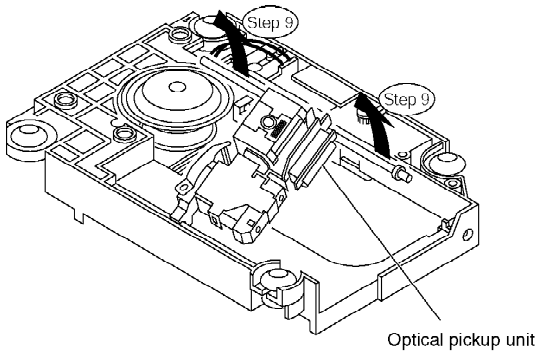
Step 6 Remove the drive rack.



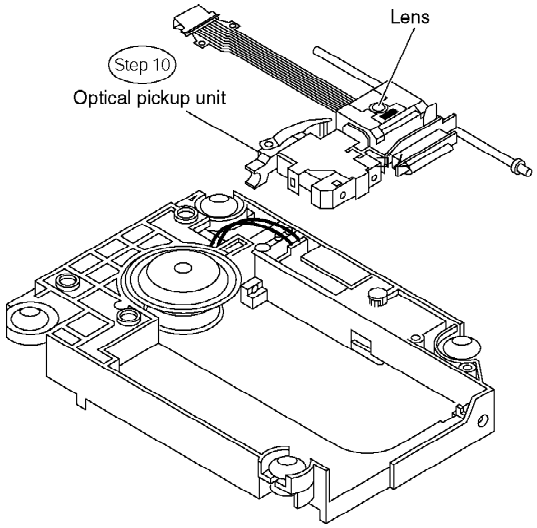
Step 7 Remove 1 screw.
Step 8 Slide the shaft in the arrow direction.



Step 9 Lift the optical pickup unit with the shaft.



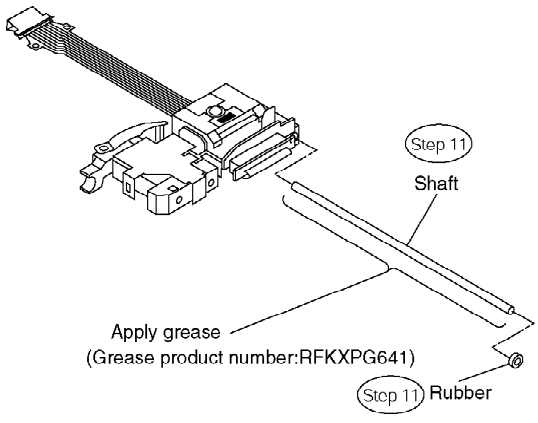
Step 10 Remove the optical pickup unit.



[Caution]

1. Do not give a considerable shock to the optical pickup unit as it has an extremely high-precise structure.
2. Do not touch the lens in the optical pickup unit.

Step 11 Pull the shaft and the rubber out.

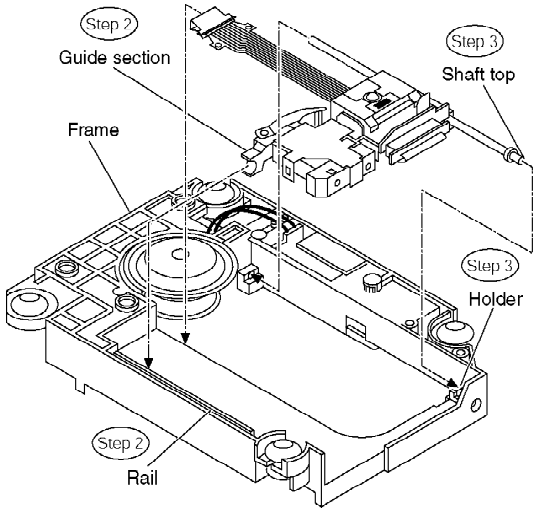


(Assembling the optical pickup unit)

Step 1 Pass the intermediate FPC through the frame hole.

Step 2 Align the guide section of the optical pickup unit with the rail.

Step 3 Install the shaft top to the holder.



12. Measurements and Adjustments

12.1. Service Tools and Equipment

Application	Name	Number
Tilt adjustment	DVD test disc	DVDT-S20 [SPG]
	TORX screw driver (T6)	Available on sales route. (T6) or RFKZ0185 [SPG]
Others	Grease	RFKXPG641 [SPG]
Confirmation	CD test disc	PVCD-K06 or any other commercially available disc
	VCD test disc	PVCD-K06 or any other commercially available disc
	Recovery disc	RFKZD03R005 [SPG]

12.2. Important points in adjustment

12.2.1. Important points in optical adjustment

- Before starting optical adjustment, be sure to take anti-static measures.

- Optical pickup tilt adjustment is needed after replacement of the following components.

1. Optical pickup unit

2. Spindle motor unit

3. Optical pickup peripheral parts

Notes

Adjustment is generally unnecessary after replacing other parts of the traverse unit. However,

make adjustment if there is a noticeable degradation in picture quality. Optical adjustments cannot be made inside the optical pickup. Adjustment is generally unnecessary after replacing the traverse unit.

12.2.2. Important points in electrical adjustment

- Follow the adjustment procedures described in this manual.

12.3. Storing and handling of test discs

- Surface precision is vital for DVD test discs. Be sure to store and handle them carefully.

1. Do not place discs directly onto the workbench, etc., after use.

2. Handle discs carefully in order to maintain their flatness. Place them into their case after use and store them vertically. Store discs in a cool place where they are not exposed to direct sunlight or air from air conditioners.

3. Accurate adjustment will not be possible if the disc is warped when placed on a surface made of glass, etc. If this happens, use a new test disc to make optical adjustments.

4. If adjustment is done using a warped disc, the adjustment will be incorrect and some discs will not be playable.

12.4. Optical adjustment

12.4.1. Optical pickup tilt adjustment

Measurement point	Adjustment point	Mode	Disc
	Tangential adjustment screw Tilt adjustment screw	T01 (inner periphery) play T30 (center periphery) T43 (outer periphery) play	DVDT-S20 [SPG]
Measuring equipment		Adjustment value	
None (Main unit display for servicing is used.)		Adjust to the minimum jitter value.	

12.4.1.1. Adjustment procedure

1. While pressing STOP button on the main unit, press "5" on the remote control unit.

2. Confirm that "J_xxx/yyy_zz" (display1/display2) is shown on the front display.

For your information:
"yyy" and "zz" shown to the right have nothing to do with the jitter value. "yyy" is the error

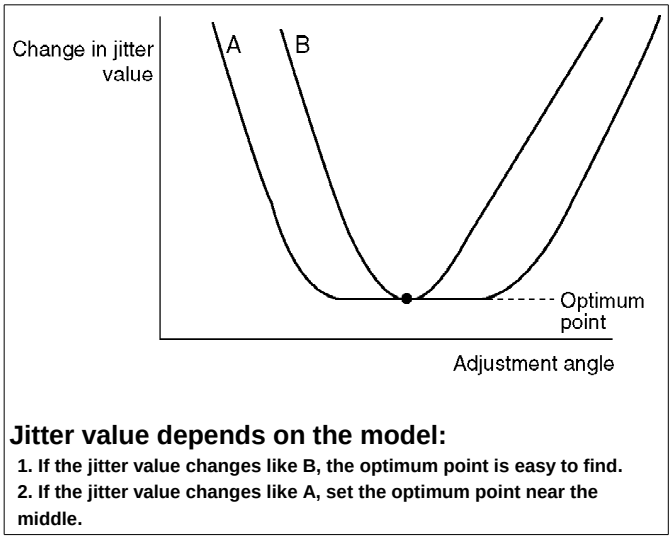
counter, while "zz" is the focus drive value.

Note:
Jitter value appears on the front display.

3. **Play test disc T30 (center periphery).**
4. **Adjust tangential adjustment screw so that the jitter value is minimized.**
5. **Play test disc T30 (center periphery).**
6. **Adjust tilt adjustment screw 1 so that the jitter value is minimized.**
7. **Play test disc T30 (center periphery).**
8. **Adjust tilt adjustment screw 2 so that the jitter value is minimized.**
9. **Repeat adjusting tilt adjustment screws 1 and 2 alternately until the jitter value is minimized.**

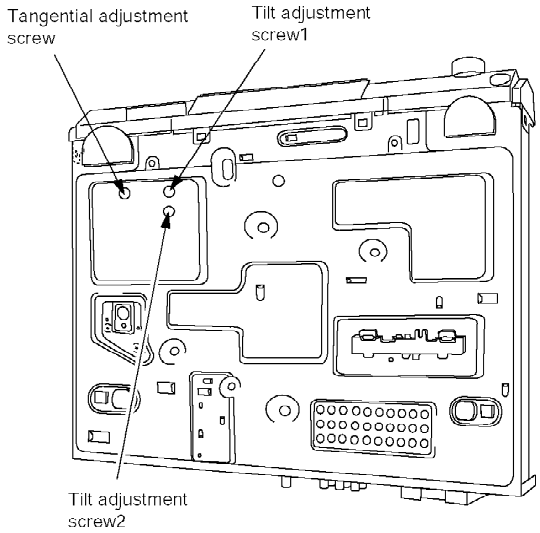
12.4.1.2. Important points

1. **Make tangential adjustment first, and then make tilt adjustment.**
2. **Repeat adjusting two or three times to find the optimum point.**
3. **Finish the procedure with tilt adjustment.**



Jitter value depends on the model:

1. If the jitter value changes like B, the optimum point is easy to find.
2. If the jitter value changes like A, set the optimum point near the middle.

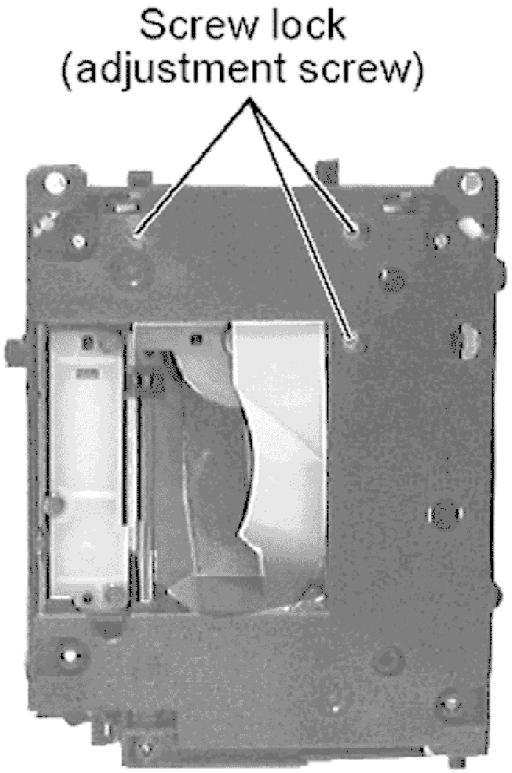


12.4.1.3. Check after adjustment

Play test disc or any other disc to make sure there is no picture degradation in the inner, middle and outer peripheries, and no audio skipping. After adjustment is finished, lock each adjustment screw in position using screw lock.

12.4.1.4. Procedure for screw lock

1. **After adjustment, remove top cover, tray, clamper base and traverse unit in this sequence.**
2. **Lay the traverse unit upside down, and fix adjustment screw with screw lock.**
3. **After fixing, reassemble traverse unit, clamper base, tray and top cover.**



12.5. Abbreviations

INITIAL/LOGO		ABBREVIATIONS
A	A0~UP	ADDRESS
	ACLK	AUDIO CLOCK
	AD0~UP	ADDRESS BUS
	ADATA	AUDIO PES PACKET DATA
	ALE	ADDRESS LATCH ENABLE
	AMUTE	AUDIO MUTE
	AREQ	AUDIO PES PACKET REQUEST
	ARF	
	ASI	AUDIO RF
	ASO	SERVO AMP INVERTED INPUT
	ASYNC	SERVO AMP OUTPUT
		AUDIO WORD DISTINCTION SYNC
B	BCK	BIT CLOCK (PCM)
	BCKIN	BIT CLOCK INPUT
	BDO	BLACK DROP OUT
	BLKCK	SUB CODE BLOCK CLOCK
	BOTTOM	CAP. FOR BOTTOM HOLD
	BYP	BYPATH
	BYTCK	BYTE CLOCK

INITIAL/LOGO		ABBREVIATIONS
C	CAV	CONSTANT ANGULAR VELOCITY
	CBDO	CAP. BLACK DROP OUT
	CD	COMPACT DISC
	CDSCK	CD SERIAL DATA CLOCK
	CDSRDATA	CD SERIAL DATA
	CDRF	CD RF (EFM) SIGNAL
	CDV	COMPACT DISC-VIDEO
	CHNDATA	CHANNEL DATA
	CKSL	SYSTEM CLOCK SELECT
	CLV	CONSTANT LINEAR VELOCITY
	COFTR	CAP. OFF TRACK
	CPA	CPU ADDRESS
	CPCS	CPU CHIP SELECT
	CPDT	CPU DATA
	CPUADR	CPU ADDRESS LATCH
	CPUADT	CPU ADDRESS DATA BUS
	CPUIRQ	CPU INTERRUPT REQUEST
	CPRD	CPU READ ENABLE
	CPWR	CPU WRITE ENABLE
	CS	CHIP SELECT
	CSYNCIN	COMPOSITE SYNC IN
	CSYNCOUT	COMPOSITE SYNC OUT
D	DACCK	D/A CONVERTER CLOCK
	DEEMP	DEEMPHASIS BIT ON/OFF
	DEMPH	DEEMPHASIS SWITCHING
	DIG0~UP	FL DIGIT OUTPUT
	DIN	DATA INPUT
	DMSRCK	DM SERIAL DATA READ CLOCK
	DMUTE	DIGITAL MUTE CONTROL
	DO	DROP OUT
	DOUT0~UP	DATA OUTPUT
	DRF	DATA SLICE RF (BIAS)
	DRPOUT	DROP OUT SIGNAL
	DREQ	DATA REQUEST
	DRESP	DATA RESPONSE
	DSC	DIGITAL SERVO CONTROLLER
	DSLF	DATA SLICE LOOP FILTER
	DVD	DIGITAL VIDEO DISC

INITIAL/LOGO		ABBREVIATIONS
E	EC	ERROR TORQUE CONTROL
	ECR	ERROR TORQUE CONTROL REFERENCE
	ENCSEL	ENCODER SELECT
	ETMCLK	EXTERNAL M CLOCK (81MHz/ 40.5MHz)
	ETSCLK	EXTERNAL S CLOCK (54MHz)
F	FBAL	FOCUS BALANCE
	FCLK	FRAME CLOCK
	FE	FOCUS ERROR
	FFI	FOCUS ERROR AMP
	FEO	INVERTED INPUT
	FG	FOCUS ERROR AMP OUTPUT
	FSC	FREQUENCY GENERATOR
	FSCK	FREQUENCY SUB CARRIER
		FS (384 OVER SAMPLING) CLOCK
G	GND	COMMON GROUNDING (EARTH)
H	HA0~UP	HOST ADDRESS
	HD0~UP	HOST DATA
	HINT	HOST INTERRUPT
	HRXW	HOST READ/WRITE
I	IECOUT	IEC958 FORMAT DATA
	IPFRAG	OUTPUT
	IREF	INTERPOLATION FLAG
	ISEL	I (CURRENT) REFERENCE
		INTERFACE MODE SELECT
L	LDON	LASER DIODE CONTROL
	LPC	LASER POWER CONTROL
	LRCK	L CH/R CH DISTINCTION CLOCK

INITIAL/LOGO		ABBREVIATIONS
M	MA0~UP	MEMORY ADDRESS
	MCK	MEMORY CLOCK
	MCKI	MEMORY CLOCK INPUT
	MCLK	MEMORY SERIAL COMMAND CLOCK
	MDATA	MEMORY SERIAL COMMAND DATA
	MDQ0~UP	MEMORY DATA INPUT/OUTPUT
	MDQM	MEMORY DATA I/O MASK
	MLD	MEMORY SERIAL COMMAND LOAD
	MPEG	MOVING PICTURE EXPERTS GROUP
O	ODC	OPTICAL DISC CONTROLLER
	OFTR	OFF TRACKING
	OSCI	OSCILLATOR INPUT
	OSCO	OSCILLATOR OUTPUT
	OSD	ON SCREEN DISPLAY
P	P1~UP	PORT
	PCD	CD TRACKING PHASE DIFFERENCE
	PCK	PLL CLOCK
	PDVD	DVD TRACKING PHASE DIFFERENCE
	PEAK	CAP. FOR PEAK HOLD
	PLLCLK / PLLOK	CHANNEL PLL CLOCK
	PWMCTL	PLL LOCK
	PWMDA	PWM OUTPUT CONTROL
	PWMOA, B	PULSE WAVE MOTOR DRIVE A PULSE WAVE MOTOR OUT A, B

INITIAL/LOGO		ABBREVIATIONS
R	RE	READ ENABLE
	RFENV	RF ENVELOPE
	RFO	RF PHASE DIFFERENCE
	RS	OUTPUT
	RSEL	(CD-ROM) REGISTER SELECT
	RST	RF POLARITY SELECT
	RSV	RESET
		RESERVE
S	SBI0, 1	SERIAL DATA INPUT
	SBO0	SERIAL DATA OUTPUT
	SBT0, 1	SERIAL CLOCK
	SCK	SERIAL DATA CLOCK
	SCKR	AUDIO SERIAL CLOCK
	SCL	RECEIVER
	SCLK	SERIAL CLOCK
	SDA	SERIAL CLOCK
	SEG0~UP	SERIAL DATA
	SELCLK	FL SEGMENT OUTPUT
	SEN	SELECT CLOCK
	SIN1, 2	SERIAL PORT ENABLE
	SOUT1, 2	SERIAL DATA IN
	SPDI	SERIAL DATA OUT
	SPDO	SERIAL PORT DATA INPUT
	SPEN	SERIAL PORT DATA OUTPUT
	SPRCLK	SERIAL PORT R/W ENABLE
	SPWCLK	SERIAL PORT READ CLOCK
	SQCK	SERIAL PORT WRITE CLOCK
	SQCX	SUB CODE Q CLOCK
	SRDATA	SUB CODE Q DATA READ
	SRMADR	CLOCK
	SRMDT0~7	SERIAL DATA
		SRAM ADDRESS BUS
	SS	SRAM DATA BUS 0~7
	STAT	START/STOP
	STCLK	STATUS
	STD0~UP	STREAM DATA CLOCK
	STENABLE	STREAM DATA
		STREAM DATA INPUT ENABLE
	STSEL	STREAM DATA POLARITY
	STVALID	SELECT
	SUBC	STREAM DATA VALIDITY
	SBCK	SUB CODE SERIAL
	SUBQ	SUB CODE CLOCK
	SYSCLK	SUB CODE Q DATA

	SYSCLK	SYSTEM CLOCK

INITIAL/LOGO		ABBREVIATIONS
T	TE	TRACKING ERROR
	TIBAL	BALANCE CONTROL
	TID	BALANCE OUTPUT 1
	TIN	BALANCE INPUT
	TIP	BALANCE INPUT
	TIS	BALANCE OUTPUT 2
	TPSN	OP AMP INPUT
	TPSO	OP AMP OUTPUT
	TPSP	OP AMP INVERTED INPUT
	TRCRS	TRACK CROSS SIGNAL
	TRON	TRACKING ON
	TRSON	TRAVERSE SERVO ON

INITIAL/LOGO		ABBREVIATIONS
V	VBLANK	V BLANKING
	VCC	COLLECTOR POWER SUPPLY VOLTAGE
	VCDCONT	VIDEO CD CONTROL (TRACKING BALANCE)
	VDD	DRAIN POWER SUPPLY VOLTAGE
	VFB	VIDEO FEED BACK
	VREF	VOLTAGE REFERENCE
	VSS	SOURCE POWER SUPPLY VOLTAGE
W	WAIT	BUS CYCLE WAIT
	WDCK	WORD CLOCK
	WEH	WRITE ENABLE HIGH
	WSR	WORD SELECT RECEIVER

INITIAL/LOGO		ABBREVIATIONS
X	X	X' TAL
	XALE	X ADDRESS LATCH ENABLE
	XAREQ	X AUDIO DATA REQUEST
	XCDROM	X CD ROM CHIP SELECT
	XCS	X CHIP SELECT
	XCSYNC	X COMPOSITE SYNC
	XDS	X DATA STROBE
	XHSYNCO	X HORIZONTAL SYNC OUTPUT
	XHINT	XH INTERRUPT REQUEST
	XI	X' TAL OSCILLATOR INPUT
	XINT	X INTERRUPT
	XMW	X MEMORY WRITE ENABLE
	XO	X' TAL OSCILLATOR OUTPUT
	XRE	X READ ENABLE
	XSRMCE	X SRAM CHIP ENABLE
	XSRMOE	X SRAM OUTPUT ENABLE
	XSRMWE	X SRAM WRITE ENABLE
	XVCS	X V-DEC CHIP SELECT
	XVDS	X V-DEC CONTROL BUS
	XVSYNCO	STROBE
		X VERTICAL SYNC OUTPUT

13. Voltage and Waveform Chart

13.1. DVD Module P.C.B.

13.2. Main P.C.B.

13.3. FL P.C.B., Scart P.C.B., Tray Loading P.C.B.

13.4. Waveform Chart

14. Illustration of IC’s, Transistors and Diodes

15. Wiring Connection Diagram

16. Block Diagram

17. Schematic Notes

- This schematic diagram may be modified at any time with the development of new technology.

Notes:

S901:

Play detection switch.

S902:

Open detection switch.

S6800:

Tray open / close switch (Open / Close).

S6805:

R. skip, search and Tuning switch (/ / TUNING).

S6801:

Stop and TUNE mode /FM mode switch (TUNE MODE/FM MODE). /

S6802:

Play and memory switch (Memory).

S6803:

Source select switch (SELECTOR).

S6806:

Standby / on switch (POWER).

S6807:

Wide surround

VR6800:

VR Volume jog

- Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.

- Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.

When replacing any of components, be sure to use only manufacturer´s specified parts shown in the parts list.

- The supply part number is described alone in the replacement parts list.

- Voltage and signal line

: +B Signal line

: CD-DA signal line

: Main signal line

: DVD (Video) signal line

: DVD (Audio) signal line

: FM/AM signal line

: -B Signal line

: MUSIC PORT signal line

: AUX signal line

Caution!

IC and LSI are sensitive to static electricity.
Secondary trouble can be prevented by taking care during repair.
Cover the parts boxes made of plastics with aluminum foil.
Ground the soldering iron.
Put a conductive mat on the work table.
Do not touch the legs of IC or LSI with the fingers directly.

18. Schematic Diagram

18.1. (A) DVD Module (DV3.2) Circuit

18.2. (B) Main/Power Circuit

18.3. (C) FL, Music Port, Top Button, Tuner Extent and Tray Motor Circuit

18.4. (D) Scart Circuit

19. Printed Circuit Board

19.1. (A) DVD Module P.C.B.

19.2. (B) Main & Power P.C.B.

19.3. (C)Tuner extent, AC-inlet, FL, Music Port, & Top button P.C.B.

19.4. (D) Scart & Tray Loading P.C.B.

20. Basic Troubleshooting Guide

20.1. Basic Troubleshooting Guide for Traverse Unit (DVD Module P.C.B.)

20.2. Troubleshooting Guide for Power section (Power circuit)

/

Refer to the follow-up supplements for this model. This is due to the information not available at the time of issue for this service manual.

21. Overall Flow-Chart (HT990)

21.1. SC-HT990 DVD Unit Block Diagram

21.2. HT990 Block Diagram (Analog Signal : DVD 5.1ch Play Back Mode)

21.3. HT990 Block Diagram (Analog Signal : 2ch Analog Input Mode)

21.4. HT990 Power Supply Block Diagram

21.5. HT990 Power Block Diagram (SMPS)

22. Terminal Function of ICs

22.1. IC2018 (C2CBYY000195): System Control Microprocessor IC

Pin No.	Terminal Name	I/O	Function
1	TRY_ / CLOSE	I	Loading mechanism close SW (L: SW ON)
2	TRAY_CCW	O	Terminal for tray control 1
3	TRAY_CW	O	Terminal for tray control 2
4	TRY_OPEN	I	Loading Mechanism open SW (L: SW ON)
5	MP_DAC1	-	No connection
6	MP_DAC2	-	No connection
7	MP_DAC3	-	No connection
8	BYTE	-	VSS (GND)
9	CNVSS	-	VSS (GND)
10	MPORT_ SELECT	-	No connection
11	RDS_ ENABLE	I	RDS Enable (H=Enable, L= Disable)
12	RESET	I	System Reset Input
13	XOUT	-	Main Clock Output (10.0 MHZ)
14	VSS	-	GND (0V)
15	XIN	-	Main Clock Input (10.0 MHZ)
16	VCC	-	Power supply (5V)
17	NMI	I	Connect to VCC, External Interrupt I/P
18	RMT	I	Remote control input
19	SYNC	I	AC failure detection input
20	AM_BP	O	AM beat proof
21	MIC_EN	-	No connection
22	WLESS_EN	-	No connection
23	EDA	I/O	DATA signal for the EEPROM
24	ECK	O	CLOCK signal for the EEPROM
25	ECS	O	LAT signal for the EEPROM
26	FMPORT_EN	I	FM enable
27	RDS_CLK	I	CLK signal from the RDS decoder
28	DVD_CLK	I	CLK signal for the DVD Module
29	DVD_STAT	I	STATUS signal from DVD Module
30	DVD_CMD	O	CMD signal for the DVD Module

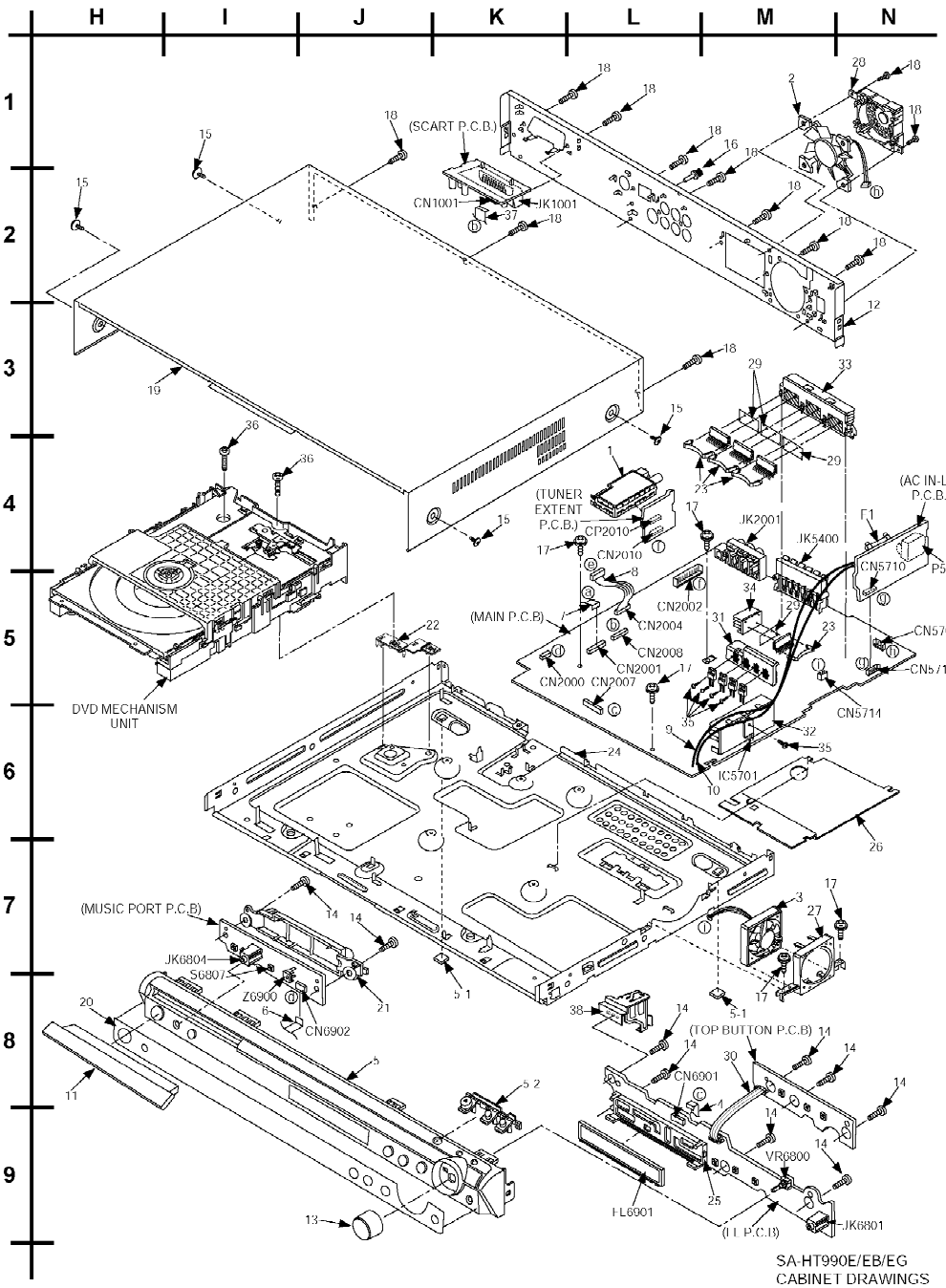
Pin No.	Terminal Name	I/O	Function
31	RF_DET	I	RF module detection - wireless ready
32	RF_PCON	-	RF power control
33	RF_LINK	I	RF link control - wireless ready
34	RF_DATA	O	RF change direction - wireless ready
35	TUN_SD	I	CMD signal for the DVD Module
36	TUN_CLK	O	I2C Clock Data Tuner
37	TUN_DO	I	Stereo Detection
38	TUN_DI	O	I2C Data for Tuner
39	N.C	-	No connection
40	PCONT	O	Control Signal for the Power Control Relay
41	EPM	-	No connection
42	DVD_MUTE	I	Signal from DVD module control mute circuit
43	WD_SRND	O	Wide surrond out
44	WS_LED	O	Wide surround LED
45	WS_EN	I	Wide surround enable
46	VIDEO_MUTE	O	Video mute control
47	N.C	-	No connection
48	N.C	-	No connection
49	N.C	-	No connection
50	N.C	-	No connection
51	N.C	-	No connection
52	N.C	-	No connection
53	N.C	-	No connection
54	N.C	-	No connection
55	N.C	-	No connection
56	N.C	-	No connection
57	N.C	-	No connection
58	N.C	-	No connection
59	N.C	-	No connection
60	N.C	-	No connection
61	OPT-EN	I	Optical enable
62	VCC	-	Power supply 5.0V
63	N.C	-	No connection
64	VSS	-	GND (0V)
65	MIC_MUTE	O	Muting circuit for thr mic input

Pin No.	Terminal Name	I/O	Function
66	MIC_SW	O	Mic surround
67	HOP_DA	O	Digital Amp frequency hop control
68	MUTE_S	O	Mute signal for surround Audio signal
69	MUTE_F	O	Mute signal output for Front speaker
70	DC_DET	I	Signal from the DC Detection circuit
71	MOD_DA	O	Digital amplifier standby control
72	DVD_PCNT	O	Control signal for the power for the DVD Module
73	CEC_OUT	-	No connection
74	HOTPLUG	-	No connection
75	CEC_IN	-	No connection
76	JOG_A	I	Signal A from Volume JOG
77	JOG_B	I	Signal B from Volume JOG
78	HP_MUTE	O	Headphone mute
79	SCART_ MUTE	O	Line out for SCART terminal
80	WIDE1	O	Control signal for the WIDE function
81	RGB_H	O	Mute signal 1 for video output
82	YC-H	O	Control signal for the video signal Mix
83	ASP_CLK	O	ASP clock
84	ASP_DAT	O	ASP data
85	FLD_CLK	O	Clock signal for the FL driver
86	FLD_STB	O	FL driver strobe
87	FLD_OUT	O	FL data out
88	RDS_DAT	I	Data signal from the RDS decoder
89	MD3	I	Model code 3
90	MD2	I	Model code 2
91	KEY 2	I	Key 2 line input
92	MD1	I	Model code 1
93	DES3	I	Region setting for DVD
94	DES2	I	Model code Digit 1
95	DES1	I	Region setting for Tuner
96	AVSS	-	Analog power supply input

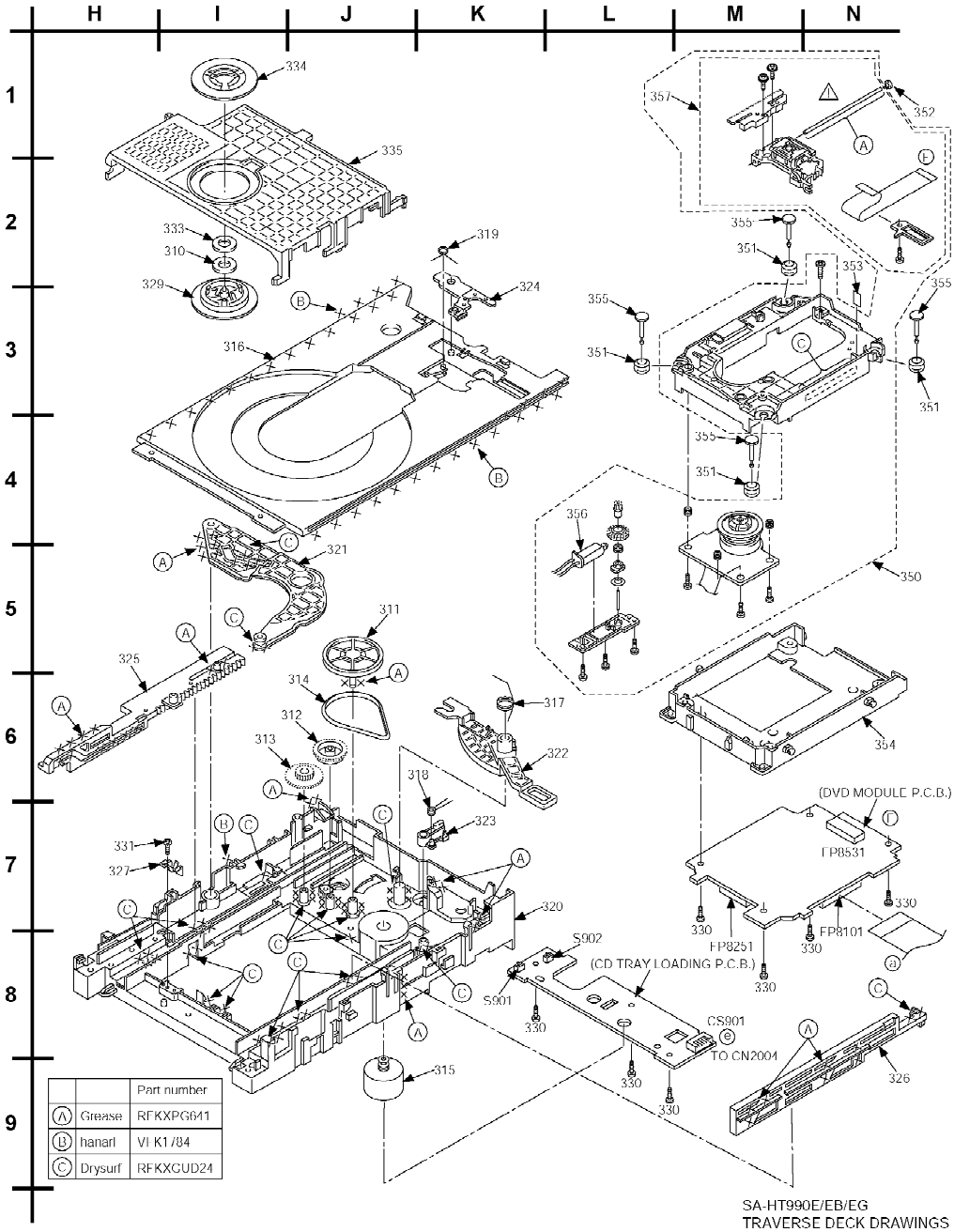
Pin No.	Terminal Name	I/O	Function
97	KEY1	I	Key 1 line input
98	VREF	-	Reference voltage input
99	AVCC	-	Analog power supply input
100	BRAKE_H	O	Terminal for tray control 3

23. Exploded Views

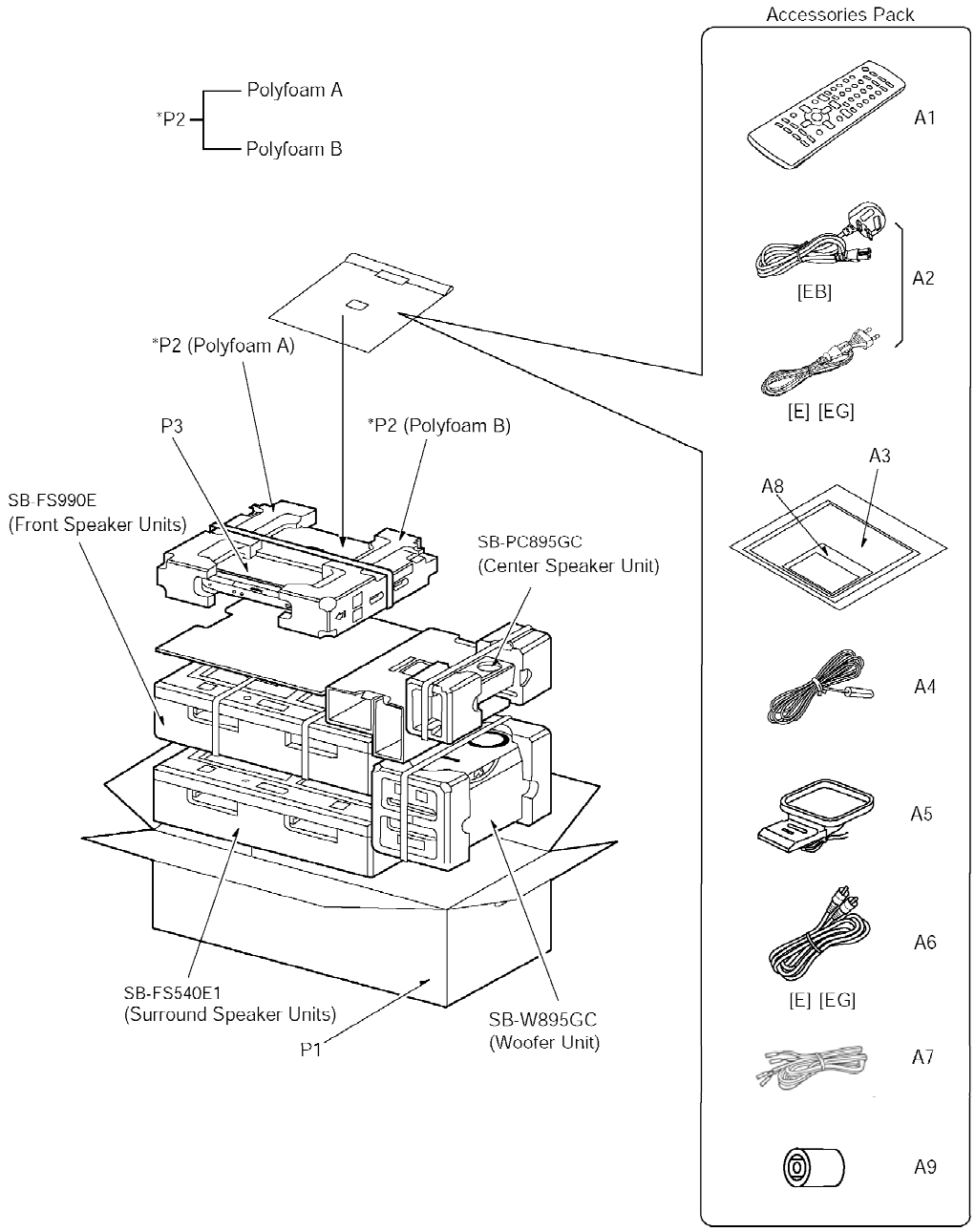
23.1. Cabinet Parts Location



SA-HT990E/EB/EG
CABINET DRAWINGS



23.2. Packaging



24. Replacement Parts List

Notes:

***Important safety notice:**

Components identified by ⚠ mark have special characteristics important for safety purpose. Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.

When replacing any of components, be sure to use only manufacture's specified parts shown in the parts list.

***Warning: This product uses a laser diode. Refer to caution statements.**

***Capacity values are in microfarads (μ F) unless specified otherwise, P=Pico-farads (pF), F= Farads (F).**

***Resistance values are in ohms, unless specified otherwise, 1K=1,000 (OHM), 1M=1,000K (OHM).**
***The parenthesized indications in the Remarks columns specify the model names and areas. (Refer to the cover page)**
***The marking (RTL) indicates the retention time is limited for this item. After the discontinuation of this assembly in production, it will no longer be available.**
***Reference for O/I book languages are as follows:**
[En: English, Ge: German, It: Italian, Fr: French, Du: Netherlandic, Da:Danish, Sw: Swedish, Sp: Spanish, Po: Polish, Cz: Czech]
***[M] indicates in the Remarks columns indicates parts supplied by PAVCSG.**
***[SPG] indicates in the Remarks columns indicates parts supplied by SPG [PAVC].**

24.1. Component Parts List

Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET AND CHASSIS	
1	J3CCBC000012	TUNER PACK	[M]
2	L6FAHAKH0001	FAN UNIT	[M]
3	L6FAYYYH0001	SIDE FAN	[M]
4	REEX0504	16P FFC CABLE	[M]
5	RYPX0105E-S	FRONT PANEL ASS'Y	[M]
5-1	RKA0059-K	LEG RUBBER	[M]
5-2	RGUX0646-S1	OPEN/CLOSE BUTTON	[M]
6	REEX0533	10P FFC CABLE	[M]
7	REEX0615	50P FFC CABLE	[M]
8	REXX0384	7P FLAT WIRE (DVD)	[M]
9	REXX0513	WIRE (BLUE)	[M] ⚠
10	REXX0514	WIRE (BROWN)	[M] ⚠
11	RGKX0327-2S	DVD LID	[M]
12	RGRX0055A-C	REAR PANEL	[M]EG/E
12	RGRX0055A-E	REAR PANEL	[M]EB
13	RGWX0076-SJ	VOLUME KNOB	[M]
14	RHD26046	SCREW	[M]
15	RHD30007-1SJ	SCREW	[M]
16	RHD30070	EARTH TERMINAL	[M]
17	RHD30111-3	SCREW	[M]
18	RHD30119-S	SCREW	[M]
19	RKMX0129-S	TOP CABINET	[M]
20	RKWX0254E-K	FL WINDOW	[M]
21	RMAX0087	MECHA HOLDER	[M]
22	RMAX0088	MECHA CHASSIS	[M]
23	RMCX0035	HEAT SINK CLIP	[M]
24	RMKX0114	BOTTOM CHASSIS	[M]
25	RMNX0149	FL HOLDER	[M]
26	RMNX0164	INSULATOR	[M]
27	RMQX0153-H	FAN BRACKET	[M]
28	RMQX0175	FAN BRACKET	[M]
29	RMZX0026-1	IC INSULATOR A	[M]
30	RWJ1103060XX	3P FLAT WIRE	[M]
31	RXXX0067-1	HEAT SINK C	[M]
32	RXXX0068	HEAT SINK D	[M]
33	RXXX0069	HEAT SINK A	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
34	RXXX0070	HEAT SINK B	[M]
35	XTB3+10JFJ	SCREW	[M]
36	XTW3+15TFJ	SCREW	[M]
37	REEX0506	19P FFC CABLE	[M]
38	RMAX0086	PANEL ANGLE	[M]
		CASSETTE DECK	
		TRAVERSE DECK	
310	RHM0003-J	MAGNET	[M]
311	RDG0547	PULLEY GEAR	[M]
312	RDG0548-1	RELAY GEAR	[M]
313	RDG0549	DRIVE GEAR	[M]
314	RDV0070	BELT	[M]
315	REM0102	MOTOR UNIT	[M]
316	RGQ0395-K1	TRAY	[M]
317	RME0350	CHANGE LEVER SPRING	[M]
318	RME0351	LOCK LEVER SPRING	[M]
319	RME0353	TRAY SLIDER SPRING	[M]
320	RMK0591	MECHA CHASSIS	[M]
321	RML0627-2	DRIVE ARM	[M]
322	RML0628	CHANGE LEVER	[M]
323	RML0629	LOCK LEVER	[M]
324	RML0631	TRAY SLIDER	[M]
325	RMM0247	DRIVE RACK	[M]
326	RMM0248	SUB RACK	[M]
327	RMC0387	SUPPORT SPRING	[M]
329	RMR1446-X	CLAMPER	[M]
330	XTN26+6GFJ	SCREW	[M]
331	XTV2+6GFJ	SCREW	[M]
333	XWG6FFY	WASHER	[M]
334	RMR1447-X	MAGNET HOLDER	[M]
335	RMR1468-K	CLAMP PLATE	[M]
350	RAE2018W-S	DT69U3 BLOCK	[M]
351	RMG0598-A	FLOATING RUBBER	[M]
352	RMG0617-H	CUSHION RUBBER A	[M]
353	RMG0618-H	CUSHION RUBBER B	[M]
354	RMR1596-X2	MIDDLE CHASSIS	[M]
355	RMS0789	FIXED PIN	[M]
356	RXQ0946	TRAVERSE MOTOR ASS'Y	[M]
357	RXQ1389	DVD OPU SUB ASS'Y	[M]
		PRINTED CIRCUIT BOARDS	
	REP4012A	DVD MODULE P.C.B.	[M] (RTL)
	REPX0535A	MAIN/POWER P.C.B.	[M] (RTL)
	REPX0512B	MUSIC PORT P.C.B.	[M] (RTL)
	REPX0535A	TUNER EXTENT P.C.B	[M] (RTL)
	REPX0535A	AC-INLET P.C.B.	[M] (RTL)
	REPX0535A	SCART P.C.B.	[M] (RTL)
	REPX0512B	FL P.C.B.	[M] (RTL)
	REPX0512B	TOP BUTTON P.C.B.	[M] (RTL)
	REP3288B	TRAY LOADING P.C.B.	[M] (RTL)

Ref. No.	Part No.	Part Name & Description	Remarks
		INTEGRATED CIRCUITS	
IC904	C0GAY0000013	IC MOTOR DRIVER	[M]
IC1101	C9ZB00000461	IC VIDEO BUFFER	[M]
IC1102	C1AB00001731	IC VIDEO BUFFER	[M]
IC2005	C1BB00001008	IC RDS	[M]
IC2018	C2CBYY000195	IC MICRO-PROCESSOR	[M]
IC2102	C1BB00001098	IC ASP	[M]
IC2103	C0AABB000125	IC HEADPHONES AMP	[M]
IC2104	C0ABCB000052	IC QUAD OP-AMP	[M]
IC2105	C0ABBB000230	IC OP AMP (MUSIC PORT)	[M]
IC2205	C0ABCB000052	IC QUAD OP-AMP	[M]
IC2301	C0JBAR000326	IC 4 CHANNEL SW	[M]
IC2600	C0ABBB000230	IC OP AMP	[M]
IC2801	C9ZB00000461	IC VIDEO BUFFER	[M]
IC2802	C1AB00001731	IC V.BUFFER	[M]
IC2903	C0DAAMH00012	IC SW REGULATOR	[M]
IC5000	C1BA00000407	IC DIGITAL AMP	[M]
IC5200	C1BA00000407	IC DIGITAL AMP	[M]
IC5300	C1BA00000407	IC DIGITAL AMP	[M]
IC5400	C1BA00000407	IC DIGITAL AMP	[M]
IC5500	C0JBAB000011	IC HEX INVERTER	[M]
IC5701	C5HABZZ00125	IC SWITCHING POWER	[M] ⚠
IC5702	C0DABFC00002	IC SHUNT REGULATOR	[M]
IC5721	C0DABYY00002	IC SW REGULATOR	[M] ⚠
IC6901	C0HBB0000057	IC DISPLAY DRIVER	[M]
IC8001	MN2DS0009AP	IC DV3.2 LSI	[M]
IC8051	C3ABPG000145	IC SDRAM	[M]
IC8111	C0CBCBD00018	IC 3.3V DC-DC CONVERTER	[M]
IC8151	C0DBEHG00006	IC 1.2V REGULATOR	[M]
IC8251	C0GBG0000048	IC MOTOR DRIVER	[M]
IC8421	C0FBBK000050	IC AUDIO DAC	[M]
IC8601	C0EBA0000029	IC RESET	[M]
IC8606	C0EBE0000455	IC RESET	[M]
IC8651	RFKWMHA0B160	IC FLASH ROM	[SPG]
IC8691	C0JBAA000346	IC AND GATE	[M]
IC8695	C0JBAA000346	IC AND GATE	[M]
		TRANSISTORS	
Q1002	UNR221200L	TRANSISTOR	[M]
Q1003	2SD0601AHL	TRANSISTOR	[M]
Q1004	UNR211H00L	TRANSISTOR	[M]
Q1005	UNR221200L	TRANSISTOR	[M]
Q1006	XN0460100L	TRANSISTOR	[M]
Q1007	2SB0709AHL	TRANSISTOR	[M]
Q1009	B1GDCFGA0018	TRANSISTOR	[M]
Q1100	2SD0601AHL	TRANSISTOR	[M]
Q1200	2SD0601AHL	TRANSISTOR	[M]
Q2003	B1GBCFLL0037	TRANSISTOR	[M]
Q2004	B1ADCE000012	TRANSISTOR	[M]
Q2006	B1GBCFJN0033	TRANSISTOR	[M]
Q2030	B1GBCFJN0033	TRANSISTOR	[M]
Q2101	B1GFGCAA0001	TRANSISTOR	[M]

[illegible]	[illegible]	[illegible]	[illegible]

Ref. No.	Part No.	Part Name & Description	Remarks
Q2201	B1GDCFGA0018	TRANSISTOR	[M]
Q2303	B1GDCFGA0018	TRANSISTOR	[M]
Q2304	B1ABCF000176	TRANSISTOR	[M]
Q2305	B1GFGCAA0001	TRANSISTOR	[M]
Q2306	B1GFGCAA0001	TRANSISTOR	[M]
Q2801	B1GBCFJN0033	TRANSISTOR	[M]
Q2804	B1GBCFJN0033	TRANSISTOR	[M]
Q2805	B1GBCFJN0033	TRANSISTOR	[M]
Q2903	B1BACD000018	TRANSISTOR	[M]
Q2904	B1AAKD000012	TRANSISTOR	[M]
Q2906	B1BCCG000002	TRANSISTOR	[M]
Q2907	B1ADCE000012	TRANSISTOR	[M]
Q2909	B1GBCFJN0033	TRANSISTOR	[M]
Q2910	B1AAKD000012	TRANSISTOR	[M]
Q2912	B1BACD000018	TRANSISTOR	[M]
Q2913	B1BACG000023	TRANSISTOR	[M]
Q2914	B1BACD000018	TRANSISTOR	[M]
Q2915	B1GBCFJN0033	TRANSISTOR	[M]
Q2955	B1BACD000018	TRANSISTOR	[M]
Q5101	B1ABCF000176	TRANSISTOR	[M]
Q5102	B1ABCF000176	TRANSISTOR	[M]
Q5500	B1ADCE000012	TRANSISTOR	[M]
Q5501	B1ABCF000176	TRANSISTOR	[M]
Q5601	B1ABCF000176	TRANSISTOR	[M]
Q5602	B1ABCF000176	TRANSISTOR	[M]
Q5603	B1ADCE000012	TRANSISTOR	[M]
Q5604	B1ABCF000176	TRANSISTOR	[M]
Q5701	2SC3940ARA	TRANSISTOR	[M]
Q5704	B1ABCF000176	TRANSISTOR	[M]
Q5705	B1ABCF000176	TRANSISTOR	[M]
Q5706	B1BACD000018	TRANSISTOR	[M]
Q5710	2SC3940ARA	TRANSISTOR	[M]
Q5740	B1BACG000048	TRANSISTOR	[M]
Q5741	B1ABCF000176	TRANSISTOR	[M]
Q5742	B1ABCF000176	TRANSISTOR	[M]
Q5744	B1ABCF000176	TRANSISTOR	[M]
Q5745	B3PBA0000237	TRANSISTOR	[M]
Q5746	B1GBCFLL0037	TRANSISTOR	[M]
Q5747	B1GDCFGA0018	TRANSISTOR	[M]
Q5748	B3PBA0000237	TRANSISTOR	[M]
Q5750	B1GBCFJN0033	TRANSISTOR	[M]
Q5751	B1ABCF000176	TRANSISTOR	[M]
Q5752	B1ABCF000176	TRANSISTOR	[M]
Q8551	2SD1819A0L	TRANSISTOR	[M]
Q8552	B1ADGB000008	TRANSISTOR	[M]
Q8561	2SD1819A0L	TRANSISTOR	[M]
Q8562	B1ADGB000008	TRANSISTOR	[M]
QR8111	XP0621400L	CHIP TRANSISTOR	[M]
QR8420	UNR521100L	CHIP TRANSISTOR	[M]
QR8571	UNR511V00L	CHIP TRANSISTOR	[M]
PC5701	B3PBA0000237	PHOTOCOUPLER	[M] ⚠
PC5721	B3PBA0000237	PHOTOCOUPLER	[M] ⚠
		DIODES	

Ref. No.	Part No.	Part Name & Description	Remarks
D2005	B0ACCK000005	DIODE	[M]
D2007	B0ACCK000005	DIODE	[M]
D2008	B0ACCK000005	DIODE	[M]
D2600	B0ACCK000005	DIODE	[M]
D2601	B0ACCK000005	DIODE	[M]
D2603	B0ACCK000005	DIODE	[M]
D2800	B0ACCK000005	DIODE	[M]
D2902	B0BC7R500001	DIODE	[M]
D2904	B0JCPD000025	DIODE	[M]
D2906	B0ADCJ000020	DIODE	[M]
D2907	B0ADCJ000020	DIODE	[M]
D2915	B0BC6R700006	DIODE	[M]
D2917	B0BC01300001	DIODE	[M]
D2918	B0ACCK000005	DIODE	[M]
D2919	B0ADCJ000020	DIODE	[M]
D2921	B0ACCK000005	DIODE	[M]
D2923	B0ACCK000005	DIODE	[M]
D2929	B0ACCK000005	DIODE	[M]
D2935	B0EAKM000117	DIODE	[M]
D2936	B0EAKM000117	DIODE	[M]
D2937	B0EAKM000117	DIODE	[M]
D2938	B0EAKM000117	DIODE	[M]
D2939	B0EAKM000117	DIODE	[M]
D2941	B0BC5R600003	DIODE	[M]
D2942	B0BC5R000009	DIODE	[M]
D2943	B0BC4R600016	DIODE	[M]
D2944	B0BC3R700004	DIODE	[M]
D2945	B0BC7R500001	DIODE	[M]
D5701	B0FBAR000018	DIODE	[M] ⚠
D5702	B0ZAZ0000052	DIODE	[M]
D5703	B0BC02900004	DIODE	[M]
D5704	B0JAME000029	DIODE	[M]
D5705	B0EAMM000057	DIODE	[M]
D5706	B0EAMM000057	DIODE	[M]
D5707	B0BC035A0007	DIODE	[M]
D5708	B0BC01700015	DIODE	[M]
D5709	B0ACCK000005	DIODE	[M]
D5710	B0EAMM000057	DIODE	[M]
D5711	B0HBSM000043	DIODE	[M]
D5712	B0HBSM000043	DIODE	[M]
D5713	B0BC4R0A0006	DIODE	[M]
D5716	B0HFRJ000012	DIODE	[M]
D5721	B0EAMM000057	DIODE	[M]
D5723	B0EAMM000057	DIODE	[M]
D5724	B0BC3R700004	DIODE	[M]
D5740	B0BC01200019	DIODE	[M]
D5741	B0EAMM000057	DIODE	[M]
D5743	B0ACCK000005	DIODE	[M]
D5744	B0ACCK000005	DIODE	[M]
D5745	B0EAKM000117	DIODE	[M]
D5746	B0BC5R600003	DIODE	[M]
D5747	B0ACCK000005	DIODE	[M]
D5748	B0EAMM000057	DIODE	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
D5749	B0EAMM000057	DIODE	[M]
D5750	B0ACCK000005	DIODE	[M]
D5752	B0BC5R000009	DIODE	[M]
D5753	B0ACCK000005	DIODE	[M]
D5754	B0ACCK000005	DIODE	[M]
D5903	B0BC01200019	DIODE	[M]
D5923	B0BC01200019	DIODE	[M]
D6900	B3AAA0000803	DIODE	[M]
D6910	B0BC4R3A0006	DIODE	[M]
D8211	MA2J11100L	DIODE	[M]
D8571	MA2J72800L	DIODE	[M]
		CHIP INDUCTORS	
LB5704	J0JKB0000020	EMI BEAD CORE	[M]
LB5705	J0JKB0000020	EMI BEAD CORE	[M]
LB5706	J0JKB0000020	EMI BEAD CORE	[M]
LB5707	J0JKB0000020	EMI BEAD CORE	[M]
LB5708	J0JKB0000020	EMI BEAD CORE	[M]
LB8001	J0JHC0000045	CHIP INDUCTOR	[M]
LB8011	J0JHC0000045	CHIP INDUCTOR	[M]
LB8257	ERJ3GEY0R00V	CHIP RESISTOR	[M]
LB8258	ERJ3GEY0R00V	CHIP RESISTOR	[M]
LB8259	ERJ3GEY0R00V	CHIP RESISTOR	[M]
LB8260	ERJ3GEY0R00V	CHIP RESISTOR	[M]
LB8301	J0JBC0000042	CHIP INDUCTOR	[M]
LB8302	J0JBC0000042	CHIP INDUCTOR	[M]
LB8303	J0JBC0000042	CHIP INDUCTOR	[M]
LB8304	J0JBC0000042	CHIP INDUCTOR	[M]
LB8305	J0JBC0000042	CHIP INDUCTOR	[M]
LB8401	J0JBC0000042	CHIP INDUCTOR	[M]
LB8421	ERJ2GE0R00X	CHIP RESISTOR	[M]
LB8422	ERJ2GE0R00X	CHIP RESISTOR	[M]
LB8423	ERJ2GE0R00X	CHIP RESISTOR	[M]
LB8424	ERJ2GE0R00X	CHIP RESISTOR	[M]
LB8425	ERJ2GE0R00X	CHIP RESISTOR	[M]
LB8426	ERJ2GE0R00X	CHIP RESISTOR	[M]
LB8427	ERJ2GE0R00X	CHIP RESISTOR	[M]
LB8428	ERJ2GE0R00X	CHIP RESISTOR	[M]
LB8429	ERJ2GE0R00X	CHIP RESISTOR	[M]
LB8431	ERJ2GE0R00X	CHIP RESISTOR	[M]
LB8491	ERJ2GE0R00X	CHIP RESISTOR	[M]
LB8530	J0JHC0000045	CHIP INDUCTOR	[M]
LB8531	ERJ2GE0R00X	CHIP RESISTOR	[M]
LB8551	J0JBC0000042	CHIP BEAD	[M]
LB8561	J0JBC0000042	CHIP BEAD	[M]
LB8571	J0JBC0000042	CHIP BEAD	[M]
LB8690	J0JBC0000106	CHIP BEAD	[M]
LB8691	ERJ2GEJ101X	CHIP RESISTOR	[M]
LB8692	ERJ2GEJ101X	CHIP RESISTOR	[M]
LB8693	ERJ2GEJ101X	CHIP RESISTOR	[M]
DZ5701	ERZV10V511CS	ZENER	[M] ⚠

Ref. No.	Part No.	Part Name & Description	Remarks
		VARIABLE RESISTORS	
VR6800	EVEKE2F2524M	VOLUME JOG	[M]
		SWITCHES	
S901	RSH1A044-1A	SW PLAY	[M]
S902	RSH1A044-1A	SW OPEN	[M]
S6800	EVQ21405R	SW OPEN/CLOSE	[M]
S6801	EVQ21405R	SW STOP	[M]
S6802	EVQ21405R	SW PLAY	[M]
S6803	EVQ21405R	SW SELECTOR	[M]
S6804	EVQ21405R	SW FORWARD	[M]
S6805	EVQ21405R	SW REVERSE	[M]
S6806	EVQ21405R	SW POWER	[M]
S6807	EVQ21405R	SW WIDE SURROUND	[M]
		CONNECTORS	
CN1001	K1MN19B00072	19P CONNECTOR	[M]
CN2001	K1MY50AA0029	50P CONNECTOR	[M]
CN2002	K1KA10AA0031	10P CONNECTOR	[M]
CN2004	K1YZ07000001	7P WIRE HOLDER	[M]
CN2006	K1MN10AA0003	10P CONNECTOR	[M]
CN2007	K1MN16AA0003	30P CONNECTOR	[M]
CN2008	K1MN19AA0004	19P CONNECTOR	[M]
CN2010	K1KB10B00042	10P CONNECTOR	[M]
CN5704	K1KA03AA0301	3P CONNECTOR	[M]
CN5710	K1KB06B00038	6P CONNECTOR	[M]
CN5711	K1KA06AA0031	6P CONNECTOR	[M]
CN5714	K1KA02AA0186	2P CONNECTOR	[M]
CN6901	K1MN16AA0003	9P CONNECTOR	[M]
CN6902	K1MN10AA0003	19P CONNECTOR	[M]
CP2010	K1KA10AA0031	10P CONNECTOR	[M]
CS901	K1KA07BA0061	7P CONNECTOR	[M]
FP8101	K1MN50BA0173	50P CONNECTOR	[M]
FP8251	K1MN06BA0148	6P CONNECTOR	[M]
FP8531	K1MY26BA0025	26P CONNECTOR	[M]
		THERMISTOR	
TH5701	D4CAC8R00002	THERMISTOR	[M] ⚠
		COILS & TRANSFORMERS	
L1001	J0JBC0000015	CHIP INDUCTOR	[M]
L1002	J0JBC0000015	CHIP INDUCTOR	[M]
L1003	J0JBC0000015	CHIP INDUCTOR	[M]
L1004	J0JBC0000015	CHIP INDUCTOR	[M]
L1005	J0JBC0000015	CHIP INDUCTOR	[M]
L2008	G0C3R3JA0027	COIL	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
L2009	G0C220JA0055	COIL	[M]
L2700	J0JBC0000041	CHIP INDUCTOR	[M]
L2701	J0JBC0000041	CHIP INDUCTOR	[M]
L2703	J0JBC0000041	CHIP INDUCTOR	[M]
L2801	G0C220JA0055	COIL	[M]
L2802	J0JBC0000015	CHIP INDUCTOR	[M]
L2803	J0JBC0000015	CHIP INDUCTOR	[M]
L2804	J0JBC0000015	CHIP INDUCTOR	[M]
L2805	J0JBC0000015	CHIP INDUCTOR	[M]
L2806	J0JBC0000015	CHIP INDUCTOR	[M]
L2807	J0JBC0000015	CHIP INDUCTOR	[M]
L2902	G0A101G00022	COIL	[M]
L2903	G0A200D00002	COIL	[M]
L2909	G0A200D00002	COIL	[M]
L2910	G0C220JA0055	COIL	[M]
L2911	G0A200D00002	COIL	[M]
L5000	ETQA15A150T	COIL	[M]
L5001	G0B9R5K00001	COIL	[M]
L5002	G0B9R5K00001	COIL	[M]
L5200	ETQA15A150T	COIL	[M]
L5201	G0B9R5K00001	COIL	[M]
L5300	ETQA15A150T	COIL	[M]
L5301	G0B9R5K00001	COIL	[M]
L5400	ETQA15A150T	COIL	[M]
L5401	G0B9R5K00001	COIL	[M]
L5402	G0B9R5K00001	COIL	[M]
L5500	J0JKB0000020	EMI BEAD CORE	[M]
L5501	J0JKB0000020	EMI BEAD CORE	[M]
L5704	ELF22V020C	COIL	[M] ⚠
L5710	G0C220JA0055	COIL	[M]
L6101	J0JBC0000019	CHIP INDUCTOR	[M]
L6201	J0JBC0000019	CHIP INDUCTOR	[M]
L6801	J0JBC0000019	CHIP INDUCTOR	[M]
L6903	J0JBC0000041	CHIP INDUCTOR	[M]
L6904	J0JBC0000019	CHIP INDUCTOR	[M]
L8201	G1C100K00019	CHIP COIL	[M]
L8301	G1C100K00019	CHIP COIL	[M]
L8302	G1C100K00019	CHIP COIL	[M]
L8501	G1C100K00019	CHIP COIL	[M]
L8550	G1C100KA0055	CHIP INDUCTOR	[M]
T5701	ETS42BJ1F6AC	TRANSFORMER	[M] ⚠
T5721	ETS19AB1Z6AG	TRANSFORMER	[M] ⚠
		COMPONENT COMBINATION	
Z6900	B3MAZ0000023	R/CONTROL SENSOR	[M]
ZA5701	EYF52BCY	FUSE HOLDER	[M]
ZA5702	EYF52BCY	FUSE HOLDER	[M]
ZJ5701	K4CZ01000027	TERMINAL	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
		OSCILLATORS	
X2001	H2B100500004	CERAMIC RESONATORS	[M]
X2700	H0H433400002	CRYSTAL	[M]
X5500	H2A375300003	CERAMIC RESISTOR	[M]
X5501	H2A415300001	CERAMIC RESISTOR	[M]
X8621	H0J270500085	CRYSTAL	[M]
		DISPLAY TUBE	
FL6901	A2BD00000160	FL DISPLAY	[M]
FL8101	F1H0J1050022	CHIP CAPACITOR	[M]
FL8102	F1H0J1050022	CHIP CAPACITOR	[M]
FL8103	F1H0J1050022	CHIP CAPACITOR	[M]
FL8104	F1J1E1040022	CHIP CAPACITOR	[M]
		FUSES	
F1	K5D402BNA005	FUSE	[M] ⚠
		FUSE PROTECTOR	
FP2000	K5G202AA0002	FUSE PROTECTOR	[M] ⚠
		HOLDERS	
H6901	K1YZ03000010	3P CABLE HOLDER	[M]
H6902	K1YZ03000010	3P CABLE HOLDER	[M]
		JACKS	
JK1001	K1FB121B0012	JK TERMINAL	[M]
JK2001	K1U717B00004	JK COMBO	[M]
JK5400	K4AC12B00003	JK SPEAKER	[M]
JK6801	K2HC103A0024	JK SMALL SIGN	[M]
JK6804	K2HC103A0024	JK MUSIC PORT	[M]
P5701	K2AA2B000015	JK AC INLET	[M] ⚠
		PACKING MATERIALS	
P1	RPGX1616	PACKING CASE	[M]E
P1	RPGX1617	PACKING CASE	[M]EB
P1	RPGX1618	PACKING CASE	[M]EG
P2	RPNX0378	POLYFOAM	[M]
P3	RPFX0058-1J	MIRAMAT	[M]
		ACCESSORIES	
A1	N2QAYZ000002	REMOTE CONTROL	[M]
A1-1	RKK-HTR0051K	R/C BATTERY COVER	[M]
A2	K2CQ2CA00002	AC CORD	[M] ⚠EG/E
A2	K2CT3CA00004	AC CORD	[M] ⚠EB
A3	RQT8596-B	O/I BOOK (EN)	[M]EB

Ref. No.	Part No.	Part Name & Description	Remarks
A3	RQT8601-D	O/I BOOK (SP/PO/CZ)	[M]EG
A3	RQT8602-H	O/I BOOK (GE/IT/FR)	[M]EG
A3	RQT8603-D	O/I BOOK (DU/DA/SW)	[M]E
A3	RQT8604-H	O/I BOOK	[M]E
A4	RSA0007-L	FM ANTENNA	[M]
A5	N1DAAAA00002	AM LOOP ANTENNA	[M]
A6	K2KA2BA00001	VIDEO CABLE	[M]EG/E
A7	REEX0449B-1L	SPEAKER CORD	[M]
A8	RQCA0968	SPEAKER LABEL	[M]
A9	K1YZ02000013	DIN ADAPTOR	[M]EB
		RESISTORS	
R1004	ERJ3GEYJ183V	18K 1/16W	[M]
R1005	ERJ3GEYJ223V	22K 1/16W	[M]
R1006	ERJ3GEYJ223V	22K 1/16W	[M]
R1007	ERJ3GEYJ223V	22K 1/16W	[M]
R1008	ERJ3GEYJ472V	4.7K 1/16W	[M]
R1009	ERJ3GEYJ472V	4.7K 1/16W	[M]
R1010	ERJ3GEYJ223V	22K 1/16W	[M]
R1011	ERJ3GEYJ102V	1K 1/16W	[M]
R1012	ERJ3GEYJ102V	1K 1/16W	[M]
R1013	ERJ3GEYF750V	75 1/16W	[M]
R1014	ERJ3GEYF750V	75 1/16W	[M]
R1015	ERJ3GEYF750V	75 1/16W	[M]
R1016	ERJ3GEYF750V	75 1/16W	[M]
R1017	ERJ3GEYF750V	75 1/16W	[M]
R1018	ERJ3GEYF750V	75 1/16W	[M]
R1019	ERJ3GEYJ471V	470 1/16W	[M]
R1020	ERJ3GEYJ102V	1K 1/16W	[M]
R1021	ERJ3GEYJ102V	1K 1/16W	[M]
R1022	ERJ3GEYJ273V	27K 1/16W	[M]
R1023	ERJ3GEYJ563V	56K 1/16W	[M]
R1024	ERJ3GEY0R00V	0 1/16W	[M]
R1100	ERJ3GEYJ471V	470 1/16W	[M]
R1101	ERJ3GEYJ821V	820 1/16W	[M]
R1102	ERJ3GEYJ104V	100K 1/16W	[M]
R1103	ERJ3GEYJ221V	220 1/16W	[M]
R1104	ERJ3GEYJ103V	10K 1/16W	[M]
R1200	ERJ3GEYJ471V	470 1/16W	[M]
R1201	ERJ3GEYJ821V	820 1/16W	[M]
R1202	ERJ3GEYJ104V	100K 1/16W	[M]
R1203	ERJ3GEYJ221V	220 1/16W	[M]
R1204	ERJ3GEYJ103V	10K 1/16W	[M]
R2000	ERJ3GEYJ221V	220 1/16W	[M]
R2001	ERJ3GEYJ104V	100K 1/16W	[M]
R2002	ERJ3GEYJ103V	10K 1/16W	[M]
R2003	ERJ3GEYJ221V	220 1/16W	[M]
R2004	ERJ3GEYJ221V	220 1/16W	[M]
R2005	ERJ3GEYJ221V	220 1/16W	[M]
R2006	ERJ3GEYJ182V	1.8K 1/16W	[M]
R2007	ERJ3GEYJ221V	220 1/16W	[M]
R2010	ERJ3GEYJ221V	220 1/16W	[M]
R2012	ERJ3GEYJ103V	10K 1/16W	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
R2014	ERJ3GEYJ273V	27K 1/16W	[M]
R2015	ERJ3GEYJ102V	1K 1/16W	[M]
R2016	ERJ3GEYJ221V	220 1/16W	[M]
R2017	ERJ3GEYJ273V	27K 1/16W	[M]
R2018	ERJ3GEYJ221V	220 1/16W	[M]
R2020	ERJ3GEYJ221V	220 1/16W	[M]
R2022	ERJ3GEYJ221V	220 1/16W	[M]
R2023	ERJ3GEYJ221V	220 1/16W	[M]
R2024	ERJ3GEYJ221V	220 1/16W	[M]
R2026	ERJ3GEYJ223V	22K 1/16W	[M]
R2028	ERJ3GEYJ223V	22K 1/16W	[M]
R2029	ERJ3GEYJ221V	220 1/16W	[M]
R2030	ERJ3GEYJ221V	220 1/16W	[M]
R2031	ERJ3GEYJ221V	220 1/16W	[M]
R2032	ERJ3GEYJ473V	47K 1/16W	[M]
R2033	ERJ3GEYJ221V	220 1/16W	[M]
R2034	ERJ3GEYJ473V	47K 1/16W	[M]
R2035	ERJ3GEYJ221V	220 1/16W	[M]
R2036	ERJ3GEYJ221V	220 1/16W	[M]
R2037	ERJ3GEYJ473V	47K 1/16W	[M]
R2038	ERJ3GEYJ221V	220 1/16W	[M]
R2039	ERJ3GEYJ103V	10K 1/16W	[M]
R2040	ERJ3GEYJ221V	220 1/16W	[M]
R2041	ERJ3GEYJ103V	10K 1/16W	[M]
R2042	ERJ3GEYJ221V	220 1/16W	[M]
R2043	ERJ3GEYJ473V	47K 1/16W	[M]
R2044	ERJ3GEYJ221V	220 1/16W	[M]
R2045	ERJ3GEYJ103V	10K 1/16W	[M]
R2046	ERJ3GEYJ221V	220 1/16W	[M]
R2047	ERJ3GEYJ221V	220 1/16W	[M]
R2048	ERJ3GEYJ221V	220 1/16W	[M]
R2049	ERJ3GEYJ221V	220 1/16W	[M]
R2050	ERJ3GEYJ221V	220 1/16W	[M]
R2051	ERJ3GEYJ103V	10K 1/16W	[M]
R2052	ERJ3GEYJ221V	220 1/16W	[M]
R2053	ERJ3GEYJ103V	10K 1/16W	[M]
R2054	ERJ3GEYJ221V	220 1/16W	[M]
R2055	ERJ3GEYJ221V	220 1/16W	[M]
R2056	ERJ3GEYJ221V	220 1/16W	[M]
R2060	ERJ3GEYJ221V	220 1/16W	[M]
R2061	ERJ3GEYJ473V	47K 1/16W	[M]
R2062	ERJ3GEYJ221V	220 1/16W	[M]
R2063	ERJ3GEYJ473V	47K 1/16W	[M]
R2064	ERJ3GEYJ221V	220 1/16W	[M]
R2065	ERJ3GEYJ221V	220 1/16W	[M]
R2066	ERJ3GEYJ222V	2.2K 1/16W	[M]
R2067	ERJ3GEYJ221V	220 1/16W	[M]
R2068	ERJ3GEYJ221V	220 1/16W	[M]
R2069	ERJ3GEYJ221V	220 1/16W	[M]
R2070	ERJ3GEYJ221V	220 1/16W	[M]
R2071	ERJ3GEYJ221V	220 1/16W	[M]
R2072	ERJ3GEYJ221V	220 1/16W	[M]
R2073	ERJ3GEYJ221V	220 1/16W	[M]
R2074	ERJ3GEYJ221V	220 1/16W	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
R2075	ERJ3GEYJ221V	220 1/16W	[M]
R2076	ERJ3GEYJ103V	10K 1/16W	[M]
R2077	ERJ3GEYJ332V	3.3K 1/16W	[M]
R2078	ERJ3GEYJ472V	4.7K 1/16W	[M]
R2079	ERJ3GEYJ103V	10K 1/16W	[M]
R2080	ERJ3GEYJ182V	1.8K 1/16W	[M]
R2081	ERJ3GEYJ103V	10K 1/16W	[M]
R2082	ERJ3GEYJ682V	6.8K 1/16W	[M]
R2083	ERJ3GEYJ221V	220 1/16W	[M]
R2084	ERJ3GEYJ473V	47K 1/16W	[M]
R2085	ERJ3GEYJ472V	4.7K 1/16W	[M]
R2086	ERJ3GEYJ223V	22K 1/16W	[M]
R2087	ERJ3GEYJ223V	22K 1/16W	[M]
R2088	ERJ3GEYJ103V	10K 1/16W	[M]
R2089	ERJ3GEYJ821V	820 1/16W	[M]
R2090	ERJ3GEYJ221V	220 1/16W	[M]
R2091	ERJ3GEYJ103V	10K 1/16W	[M]
R2092	ERJ3GEYJ221V	220 1/16W	[M]
R2093	ERJ3GEYJ821V	820 1/16W	[M]
R2094	ERJ3GEYJ103V	10K 1/16W	[M]
R2095	ERJ3GEYJ472V	4.7K 1/16W	[M]
R2101	ERJ3GEYJ103V	10K 1/16W	[M]
R2111	ERJ3GEYJ103V	10K 1/16W	[M]
R2112	ERJ3GEYJ183V	18K 1/16W	[M]
R2113	ERJ3GEY0R00V	0 1/16W	[M]
R2114	ERJ3GEYJ153V	15K 1/16W	[M]
R2115	ERJ3GEYJ222V	2.2K 1/16W	[M]
R2160	ERJ3GEYJ333V	33K 1/16W	[M]
R2161	ERJ3GEYJ473V	47K 1/16W	[M]
R2164	ERJ3GEYJ103V	10K 1/16W	[M]
R2165	ERJ3GEYJ682V	6.8K 1/16W	[M]
R2168	ERJ3GEYJ222V	2.2K 1/16W	[M]
R2169	ERJ3GEYJ104V	100K 1/16W	[M]
R2170	ERJ3GEYJ222V	2.2K 1/16W	[M]
R2171	ERJ3GEYJ273V	27K 1/16W	[M]
R2172	ERJ3GEYJ182V	1.8K 1/16W	[M]
R2175	ERJ3GEYJ562V	5.6K 1/16W	[M]
R2176	ERJ3GEYJ393V	39K 1/16W	[M]
R2177	ERJ3GEYJ220V	22 1/16W	[M]
R2178	ERJ3GEYJ220V	22 1/16W	[M]
R2179	ERJ3GEYJ220V	22 1/16W	[M]
R2180	ERJ3GEYJ220V	22 1/16W	[M]
R2181	ERJ3GEYJ332V	3.3K 1/16W	[M]
R2182	ERJ3GEYJ102V	1K 1/16W	[M]
R2185	ERJ3GEYJ122V	1.2K 1/16W	[M]
R2188	ERJ3GEYJ222V	2.2K 1/16W	[M]
R2189	ERJ3GEYJ152V	1.5K 1/16W	[M]
R2191	ERJ3GEYJ183V	18K 1/16W	[M]
R2193	ERJ3GEY0R00V	0 1/16W	[M]
R2194	ERJ3GEYJ272V	2.7K 1/16W	[M]
R2201	ERJ3GEYJ103V	10K 1/16W	[M]
R2211	ERJ3GEYJ103V	10K 1/16W	[M]
R2212	ERJ3GEYJ183V	18K 1/16W	[M]
R2214	ERJ3GEYJ153V	15K 1/16W	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
R2215	ERJ3GEYJ222V	2.2K 1/16W	[M]
R2218	ERJ3GEY0R00V	0 1/16W	[M]
R2260	ERJ3GEYJ333V	33K 1/16W	[M]
R2261	ERJ3GEYJ473V	47K 1/16W	[M]
R2264	ERJ3GEYJ103V	10K 1/16W	[M]
R2265	ERJ3GEYJ682V	6.8K 1/16W	[M]
R2268	ERJ3GEYJ222V	2.2K 1/16W	[M]
R2269	ERJ3GEYJ104V	100K 1/16W	[M]
R2270	ERJ3GEYJ222V	2.2K 1/16W	[M]
R2271	ERJ3GEYJ563V	56K 1/16W	[M]
R2275	ERJ3GEYJ562V	5.6K 1/16W	[M]
R2276	ERJ3GEYJ393V	39K 1/16W	[M]
R2277	ERJ3GEYJ220V	22 1/16W	[M]
R2278	ERJ3GEYJ220V	22 1/16W	[M]
R2279	ERJ3GEYJ220V	22 1/16W	[M]
R2280	ERJ3GEYJ220V	22 1/16W	[M]
R2281	ERJ3GEYJ332V	3.3K 1/16W	[M]
R2282	ERJ3GEYJ102V	1K 1/16W	[M]
R2285	ERJ3GEYJ122V	1.2K 1/16W	[M]
R2288	ERJ3GEYJ222V	2.2K 1/16W	[M]
R2289	ERJ3GEYJ152V	1.5K 1/16W	[M]
R2291	ERJ3GEYJ183V	18K 1/16W	[M]
R2293	ERJ3GEY0R00V	0 1/16W	[M]
R2294	ERJ3GEYJ272V	2.7K 1/16W	[M]
R2300	ERJ3GEYJ223V	22K 1/16W	[M]
R2301	ERJ3GEYJ473V	47K 1/16W	[M]
R2302	ERJ3GEYJ223V	22K 1/16W	[M]
R2303	ERJ3GEYJ332V	3.3K 1/16W	[M]
R2304	ERJ3GEYJ123V	12K 1/16W	[M]
R2307	ERJ3GEYJ182V	1.8K 1/16W	[M]
R2308	ERJ3GEY0R00V	0 1/16W	[M]
R2309	ERJ3GEYJ153V	15K 1/16W	[M]
R2312	ERJ3GEYJ102V	1K 1/16W	[M]
R2313	ERJ3GEYJ223V	22K 1/16W	[M]
R2314	ERJ3GEYJ103V	10K 1/16W	[M]
R2315	ERJ3GEYJ103V	10K 1/16W	[M]
R2317	ERJ3GEYJ223V	22K 1/16W	[M]
R2319	ERJ3GEYJ473V	47K 1/16W	[M]
R2320	ERJ3GEYJ473V	47K 1/16W	[M]
R2321	ERJ3GEYJ273V	27K 1/16W	[M]
R2322	ERJ3GEYJ223V	22K 1/16W	[M]
R2323	ERJ3GEYJ472V	4.7K 1/16W	[M]
R2324	ERJ3GEYJ223V	22K 1/16W	[M]
R2325	ERJ3GEYJ223V	22K 1/16W	[M]
R2326	ERJ3GEYJ123V	12K 1/16W	[M]
R2327	ERJ3GEYJ273V	27K 1/16W	[M]
R2328	ERJ3GEYJ563V	56K 1/16W	[M]
R2329	ERJ3GEYJ222V	2.2K 1/16W	[M]
R2330	ERJ3GEYJ561V	560 1/16W	[M]
R2331	ERJ3GEYJ472V	4.7K 1/16W	[M]
R2332	ERJ3GEYJ223V	22K 1/16W	[M]
R2333	ERJ3GEYJ333V	33K 1/16W	[M]
R2334	ERJ3GEYJ273V	27K 1/16W	[M]
R2335	ERJ3GEYJ223V	22K 1/16W	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
R2336	ERJ3GEYJ123V	12K 1/16W	[M]
R2338	ERJ3GEYJ182V	1.8K 1/16W	[M]
R2339	ERJ3GEYJ272V	2.7K 1/16W	[M]
R2341	ERJ3GEYJ472V	4.7K 1/16W	[M]
R2342	ERJ3GEYJ102V	1K 1/16W	[M]
R2400	ERJ3GEYJ223V	22K 1/16W	[M]
R2401	ERJ3GEYJ473V	47K 1/16W	[M]
R2402	ERJ3GEYJ223V	22K 1/16W	[M]
R2403	ERJ3GEYJ332V	3.3K 1/16W	[M]
R2404	ERJ3GEYJ123V	12K 1/16W	[M]
R2405	ERJ3GEYJ562V	5.6K 1/16W	[M]
R2406	ERJ3GEYJ562V	5.6K 1/16W	[M]
R2407	ERJ3GEYJ182V	1.8K 1/16W	[M]
R2408	ERJ3GEY0R00V	0 1/16W	[M]
R2409	ERJ3GEYJ153V	15K 1/16W	[M]
R2412	ERJ3GEYJ102V	1K 1/16W	[M]
R2413	ERJ3GEYJ223V	22K 1/16W	[M]
R2414	ERJ3GEYJ103V	10K 1/16W	[M]
R2415	ERJ3GEYJ103V	10K 1/16W	[M]
R2417	ERJ3GEYJ223V	22K 1/16W	[M]
R2419	ERJ3GEYJ223V	22K 1/16W	[M]
R2420	ERJ3GEYJ223V	22K 1/16W	[M]
R2421	ERJ3GEYJ223V	22K 1/16W	[M]
R2422	ERJ3GEYJ472V	4.7K 1/16W	[M]
R2423	ERJ3GEYJ123V	12K 1/16W	[M]
R2424	ERJ3GEYJ223V	22K 1/16W	[M]
R2425	ERJ3GEYJ223V	22K 1/16W	[M]
R2426	ERJ3GEYJ472V	4.7K 1/16W	[M]
R2432	ERJ3GEYJ223V	22K 1/16W	[M]
R2433	ERJ3GEYJ333V	33K 1/16W	[M]
R2434	ERJ3GEYJ273V	27K 1/16W	[M]
R2435	ERJ3GEYJ223V	22K 1/16W	[M]
R2436	ERJ3GEYJ123V	12K 1/16W	[M]
R2439	ERJ3GEYJ272V	2.7K 1/16W	[M]
R2440	ERJ3GEYJ472V	4.7K 1/16W	[M]
R2441	ERJ3GEYJ472V	4.7K 1/16W	[M]
R2500	ERJ3GEYJ223V	22K 1/16W	[M]
R2501	ERJ3GEYJ153V	15K 1/16W	[M]
R2502	ERJ3GEYJ103V	10K 1/16W	[M]
R2503	ERJ3GEYJ562V	5.6K 1/16W	[M]
R2510	ERJ3GEYJ332V	3.3K 1/16W	[M]
R2511	ERJ3GEYJ103V	10K 1/16W	[M]
R2512	ERJ3GEYJ272V	2.7K 1/16W	[M]
R2600	ERJ3GEYJ332V	3.3K 1/16W	[M]
R2601	ERJ3GEYJ153V	15K 1/16W	[M]
R2602	ERJ3GEYJ103V	10K 1/16W	[M]
R2603	ERJ3GEYJ103V	10K 1/16W	[M]
R2604	ERJ3GEYJ103V	10K 1/16W	[M]
R2605	ERJ3GEYJ183V	18K 1/16W	[M]
R2606	ERJ3GEYJ823V	82K 1/16W	[M]
R2607	ERJ3GEYJ103V	10K 1/16W	[M]
R2608	ERJ3GEYJ563V	56K 1/16W	[M]
R2609	ERJ3GEYJ152V	1.5K 1/16W	[M]
R2610	ERJ3GEYJ393V	39K 1/16W	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
R2611	ERJ3GEYJ182V	1.8K 1/16W	[M]
R2612	ERJ3GEYJ683V	68K 1/16W	[M]
R2617	ERJ3GEYJ682V	6.8K 1/16W	[M]
R2619	ERJ3GEYJ103V	10K 1/16W	[M]
R2620	ERJ3GEYJ823V	82K 1/16W	[M]
R2621	ERJ3GEYJ393V	39K 1/16W	[M]
R2626	ERJ3GEYJ683V	68K 1/16W	[M]
R2627	ERJ3GEYJ683V	68K 1/16W	[M]
R2628	ERJ3GEYJ103V	10K 1/16W	[M]
R2629	ERJ3GEYJ103V	10K 1/16W	[M]
R2630	ERJ3GEY0R00V	0 1/16W	[M]
R2633	ERJ3GEYJ391V	390 1/16W	[M]
R2634	ERJ3GEYJ391V	390 1/16W	[M]
R2700	ERJ3GEYJ102V	1K 1/16W	[M]
R2701	ERJ3GEYJ104V	100K 1/16W	[M]
R2702	ERJ3GEYJ102V	1K 1/16W	[M]
R2703	ERJ3GEYJ102V	1K 1/16W	[M]
R2704	ERJ3GEYJ560V	56 1/16W	[M]
R2803	ERJ3GEYJ102V	1K 1/16W	[M]
R2804	ERJ3GEYJ102V	1K 1/16W	[M]
R2807	ERJ3GEYJ102V	1K 1/16W	[M]
R2809	ERJ3GEYJ750V	75 1/16W	[M]
R2812	ERJ3GEYJ750V	75 1/16W	[M]
R2813	ERJ3GEYJ750V	75 1/16W	[M]
R2816	ERJ3GEYJ750V	75 1/16W	[M]
R2817	ERJ3GEYJ750V	75 1/16W	[M]
R2818	ERJ3GEYJ750V	75 1/16W	[M]
R2904	ERJ3GEYJ471V	470 1/16W	[M]
R2905	ERJ6GEYJ682V	6.8K 1/10W	[M]
R2906	ERG2SJ471E	470 2W	[M]
R2907	ERJ3GEYJ272V	2.7K 1/16W	[M]
R2908	ERJ3GEYJ561V	560 1/16W	[M]
R2913	ERG2SJ471E	470 2W	[M]
R2914	ERJ6GEYJ682V	6.8K 1/10W	[M]
R2915	ERJ3GEYJ272V	2.7K 1/16W	[M]
R2918	ERJ3GEYJ103V	10K 1/16W	[M]
R2919	ERJ3GEYJ102V	1K 1/16W	[M]
R2920	ERJ3GEYJ472V	4.7K 1/16W	[M]
R2921	ERJ3GEYJ331V	330 1/16W	[M]
R2922	ERJ3GEYJ393V	39K 1/16W	[M]
R2923	ERJ3GEYJ153V	15K 1/16W	[M]
R2924	ERJ3GEYJ101V	100 1/16W	[M]
R2926	ERX2SJ1R5E	1.5 2W	[M]
R2929	ERJ3GEYJ220V	22 1/16W	[M]
R2933	ERJ3GEYJ151V	150 1/16W	[M]
R2934	ERJ3GEYJ821V	820 1/16W	[M]
R2935	ERJ3GEYJ472V	4.7K 1/16W	[M]
R2936	ERJ3GEYJ560V	56 1/16W	[M]
R2940	ERJ3GEYJ332V	3.3K 1/16W	[M]
R2942	ERJ3GEYJ222V	2.2K 1/16W	[M]
R2943	ERJ3GEYJ272V	2.7K 1/16W	[M]
R2944	ERJ3GEYJ472V	4.7K 1/16W	[M]
R2949	ERJ3GEYJ102V	1K 1/16W	[M]
R2950	ERJ3GEYJ102V	1K 1/16W	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
R2951	ERG2SJ470E	47 2W	[M]
R2952	ERG2SJ471E	470 2W	[M]
R2960	ERJ3GEYJ101V	100 1/16W	[M]
R2964	ERJ3GEYJ220V	22 1/16W	[M]
R2967	ERJ6GEYJ681V	680 1/10W	[M]
R2968	ERJ6GEYJ681V	680 1/10W	[M]
R2969	ERJ6GEYJ681V	680 1/10W	[M]
R2970	ERJ3GEYJ220V	22 1/16W	[M]
R2971	ERX2SJ1R5E	1.5 2W	[M]
R2972	ERJ3GEYJ220V	22 1/16W	[M]
R2973	ERJ3GEYJ151V	150 1/16W	[M]
R2974	ERD2FCVJ4R7T	4.7 1/4W	[M]
R2975	ERD2FCVJ4R7T	4.7 1/4W	[M]
R2976	ERJ3GEYJ4R7V	4.7 1/16W	[M]
R5000	ERJ3GEYJ562V	5.6K 1/16W	[M]
R5001	ERJ3GEYJ562V	5.6K 1/16W	[M]
R5002	ERJ3GEYJ562V	5.6K 1/16W	[M]
R5003	ERJ3GEYJ562V	5.6K 1/16W	[M]
R5004	ERJ8GEYJ100V	10 1/8W	[M]
R5005	ERJ8GEYJ100V	10 1/8W	[M]
R5006	ERJ1TYJ220U	22 1/8W	[M]
R5007	ERJ1TYJ220U	22 1/8W	[M]
R5010	ERJ8GEYJ100V	10 1/8W	[M]
R5011	ERJ8GEYJ100V	10 1/8W	[M]
R5019	ERJ3GEYJ683V	68K 1/16W	[M]
R5020	ERJ3GEYJ124V	120K 1/16W	[M]
R5021	ERJ3GEYJ222V	2.2K 1/16W	[M]
R5022	ERJ3GEYJ122V	1.2K 1/16W	[M]
R5030	ERJ3GEYJ562V	5.6K 1/16W	[M]
R5031	ERJ3GEYJ562V	5.6K 1/16W	[M]
R5032	ERJ3GEYJ562V	5.6K 1/16W	[M]
R5033	ERJ3GEYJ562V	5.6K 1/16W	[M]
R5034	ERJ3GEYJ562V	5.6K 1/16W	[M]
R5035	ERJ3GEYJ562V	5.6K 1/16W	[M]
R5036	ERJ3GEYJ562V	5.6K 1/16W	[M]
R5037	ERJ3GEYJ562V	5.6K 1/16W	[M]
R5103	ERJ3GEYJ562V	5.6K 1/16W	[M]
R5104	ERJ3GEYJ562V	5.6K 1/16W	[M]
R5110	ERJ3GEYJ223V	22K 1/16W	[M]
R5111	ERJ3GEYJ124V	120K 1/16W	[M]
R5113	ERJ3GEYJ683V	68K 1/16W	[M]
R5118	ERJ3GEYJ562V	5.6K 1/16W	[M]
R5119	ERJ3GEYJ562V	5.6K 1/16W	[M]
R5200	ERJ8GEYJ100V	10 1/8W	[M]
R5201	ERJ8GEYJ100V	10 1/8W	[M]
R5205	ERJ3GEYJ562V	5.6K 1/16W	[M]
R5206	ERJ3GEYJ562V	5.6K 1/16W	[M]
R5209	ERJ1TYJ220U	22 1/8W	[M]
R5210	ERJ8GEYJ100V	10 1/8W	[M]
R5211	ERJ8GEYJ100V	10 1/8W	[M]
R5217	ERJ1TYJ220U	22 1/8W	[M]
R5218	ERJ3GEYJ124V	120K 1/16W	[M]
R5228	ERJ3GEYJ683V	68K 1/16W	[M]
R5300	ERJ1TYJ220U	22 1/8W	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
R5302	ERJ8GEYJ100V	10 1/8W	[M]
R5305	ERJ8GEYJ100V	10 1/8W	[M]
R5306	ERJ3GEYJ562V	5.6K 1/16W	[M]
R5307	ERJ3GEYJ562V	5.6K 1/16W	[M]
R5310	ERJ8GEYJ100V	10 1/8W	[M]
R5311	ERJ8GEYJ100V	10 1/8W	[M]
R5318	ERJ3GEYJ124V	120K 1/16W	[M]
R5319	ERJ1TYJ220U	22 1/8W	[M]
R5328	ERJ3GEYJ683V	68K 1/16W	[M]
R5400	ERJ1TYJ220U	22 1/8W	[M]
R5402	ERJ8GEYJ100V	10 1/8W	[M]
R5405	ERJ8GEYJ100V	10 1/8W	[M]
R5410	ERJ8GEYJ100V	10 1/8W	[M]
R5411	ERJ8GEYJ100V	10 1/8W	[M]
R5419	ERJ1TYJ220U	22 1/8W	[M]
R5501	ERJ3GEYJ102V	1K 1/16W	[M]
R5502	ERJ3GEYJ103V	10K 1/16W	[M]
R5503	ERJ3GEYJ104V	100K 1/16W	[M]
R5504	ERJ3GEYJ220V	22 1/16W	[M]
R5505	ERJ3GEYJ104V	100K 1/16W	[M]
R5506	ERJ3GEYJ682V	6.8K 1/16W	[M]
R5507	ERJ3GEYJ105V	1M 1/16W	[M]
R5508	ERJ3GEYJ104V	100K 1/16W	[M]
R5509	ERJ3GEY0R00V	0 1/16W	[M]
R5601	ERJ3GEYJ104V	100K 1/16W	[M]
R5602	ERJ3GEYJ103V	10K 1/16W	[M]
R5603	ERJ3GEYJ103V	10K 1/16W	[M]
R5604	ERJ3GEYJ103V	10K 1/16W	[M]
R5605	ERJ3GEYJ104V	100K 1/16W	[M]
R5606	ERJ3GEYJ103V	10K 1/16W	[M]
R5607	ERJ3GEYJ103V	10K 1/16W	[M]
R5608	ERJ3GEYJ103V	10K 1/16W	[M]
R5609	ERJ3GEYJ103V	10K 1/16W	[M]
R5610	ERJ3GEYJ822V	8.2K 1/16W	[M]
R5611	ERJ3GEYJ822V	8.2K 1/16W	[M]
R5702	ERJ3GEY0R00V	0 1/16W	[M]
R5703	ERJ6GEYJ681V	680 1/10W	[M]
R5704	ERX2LJ68MP	0.68 2W	[M]
R5706	ERG2SJ333P	33K 2W	[M]
R5707	ERG2SJ333P	33K 2W	[M]
R5708	ERJ6GEYJ332V	3.3K 1/10W	[M]
R5709	ERJ6GEYJ222V	2.2K 1/10W	[M]
R5710	ERJ6GEYJ103V	10K 1/10W	[M]
R5711	ERJ6GEYJ220V	22 1/10W	[M]
R5712	ERJ6GEYJ222V	2.2K 1/10W	[M]
R5713	ERJ3GEYF182V	1.8K 1/16W	[M]
R5714	ERJ3GEYF473V	47K 1/16W	[M]
R5715	ERJ3GEYJ153V	15K 1/16W	[M]
R5716	ERJ3GEYJ680V	68 1/16W	[M]
R5723	ERJ3GEYF472V	4.7K 1/16W	[M]
R5724	ERJ3GEYF122V	1.2K 1/16W	[M]
R5725	ERJ3GEYF561V	560 1/16W	[M]
R5726	ERJ3GEYJ102V	1K 1/16W	[M]
R5727	ERJ3GEYJ222V	2.2K 1/16W	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
R5728	ERJ3GEYF182V	1.8K 1/16W	[M]
R5729	ERJ6GEYJ103V	10K 1/10W	[M]
R5735	ERJM1WSF10MU	1 1/2W	[M]
R5736	ERJ3GEYJ152V	1.5K 1/16W	[M]
R5737	ERJ3GEYJ220V	22 1/16W	[M]
R5739	ERJ6GEYJ122V	1.2K 1/10W	[M]
R5745	ERJ3GEY0R00V	0 1/16W	[M]
R5746	ERJ3GEYJ333V	33K 1/16W	[M]
R5747	ERJ3GEYJ392V	3.9K 1/16W	[M]
R5751	ERDS1TJ474	470K 1/2W	[M] ⚠
R5754	ERJ3GEYJ223V	22K 1/16W	[M]
R5755	ERJ3GEYJ103V	10K 1/16W	[M]
R5756	ERJ3GEYJ103V	10K 1/16W	[M]
R5757	ERJ3GEYJ103V	10K 1/16W	[M] ⚠
R5758	ERDS1TJ474	470K 1/2W	[M]
R5759	ERJ3GEYJ104V	100K 1/16W	[M]
R5760	ERJ3GEYJ103V	10K 1/16W	[M]
R5763	ERJ3GEYF222V	2.2K 1/16W	[M]
R5764	ERJ3GEYJ102V	1K 1/16W	[M]
R5765	ERG2SJ470E	47 2W	[M]
R5766	ERG1SJ220E	22 1W	[M]
R5767	ERJ3GEYJ102V	1K 1/16W	[M]
R5768	ERJ3GEYJ104V	100K 1/16W	[M]
R5769	ERJ3GEYJ104V	100K 1/16W	[M]
R5771	ERJ6GEYJ100V	10 1/10W	[M]
R5772	ERDS1FVJ4R7T	4.7 1/2W	[M]
R5774	ERDS1FVJ4R7T	4.7 1/2W	[M]
R5776	ERJ3GEYJ331V	330 1/16W	[M]
R5777	ERJ3GEYJ121V	120 1/16W	[M]
R5778	ERDS1FVJ4R7T	4.7 1/2W	[M]
R5779	ERJ3GEYJ102V	1K 1/16W	[M]
R5781	ERG2SJ470E	47 2W	[M]
R5782	ERG2SJ470E	47 2W	[M]
R5784	ERJ8GEYJ394V	390K 1/8W	[M]
R5785	ERJ8GEYJ394V	390K 1/8W	[M]
R5786	ERJ3GEYJ104V	100K 1/16W	[M]
R5791	ERJ3GEYJ152V	1.5K 1/16W	[M]
R5792	ERJ3GEYJ225V	2.2M 1/16W	[M]
R5796	ERJ3GEYJ103V	10K 1/16W	[M]
R5797	ERJ3GEYJ123V	12K 1/16W	[M]
R5798	ERG2SJ470E	47 2W	[M]
R5799	ERG2SJ470E	47 2W	[M]
R5917	ERJ3GEYJ221V	220 1/16W	[M]
R5918	ERJ3GEYJ221V	220 1/16W	[M]
R6807	ERJ3GEYJ223V	22K 1/16W	[M]
R6809	ERJ3GEYJ223V	22K 1/16W	[M]
R6829	ERJ3GEYJ102V	1K 1/16W	[M]
R6905	ERJ3GEYJ681V	680 1/16W	[M]
R6914	ERJ3GEYJ563V	56K 1/16W	[M]
R6916	ERJ3GEYJ680V	68 1/16W	[M]
R6917	ERJ3GEYJ102V	1K 1/16W	[M]
R6918	ERJ3GEYJ223V	22K 1/16W	[M]
R6919	ERJ3GEYJ680V	68 1/16W	[M]
R6922	ERJ3GEYJ182V	1.8K 1/16W	[M]

[illegible]	[illegible]	[illegible]	[illegible]

Ref. No.	Part No.	Part Name & Description	Remarks
R6923	ERJ3GEYJ222V	2.2K 1/16W	[M]
R6924	ERJ3GEYJ272V	2.7K 1/16W	[M]
R6925	ERJ3GEYJ102V	1K 1/16W	[M]
R6926	ERJ3GEYJ102V	1K 1/16W	[M]
R6927	ERJ3GEYJ122V	1.2K 1/16W	[M]
R6928	ERJ3GEYJ102V	1K 1/16W	[M]
R6934	ERJ3GEYJ470V	47 1/16W	[M]
R6935	ERJ3GEYJ151V	150 1/16W	[M]
R6936	ERJ3GEYJ151V	150 1/16W	[M]
R6939	ERJ3GEY0R00V	0 1/16W	[M]
R6940	ERJ3GEY0R00V	0 1/16W	[M]
R6948	ERJ3GEYJ101V	100 1/16W	[M]
R6949	ERJ3GEYJ101V	100 1/16W	[M]
R6950	ERJ3GEYJ472V	4.7K 1/16W	[M]
R6951	ERJ3GEYJ472V	4.7K 1/16W	[M]
R8003	ERJ2GEJ473X	47K 2W	[M]
R8011	ERJ2GEJ220X	22 2W	[M]
R8012	ERJ2GEJ220X	22 2W	[M]
R8013	ERJ2GEJ220X	22 2W	[M]
R8041	ERJ2GEJ330X	33 2W	[M]
R8153	ERJ2RHD621X	620 2W	[M]
R8154	ERJ2RHD102X	1K 2W	[M]
R8211	ERJ2GEJ103X	10K 2W	[M]
R8221	ERJ2GEJ822X	8.2K 2W	[M]
R8225	ERJ2GEJ822X	8.2K 2W	[M]
R8230	ERJ2GEJ222X	2.2K 2W	[M]
R8231	ERJ2GEJ223X	22K 2W	[M]
R8232	ERJ2GEJ752X	7.5K 2W	[M]
R8251	ERJ6GEYJ6R8V	6.8 1/10W	[M]
R8261	ERJ2GEJ823X	82K 2W	[M]
R8262	ERJ2GEJ153X	15K 2W	[M]
R8263	ERJ2GEJ823X	82K 2W	[M]
R8264	ERJ2GEJ153X	15K 2W	[M]
R8311	ERJ2RHD242X	2.4K 2W	[M]
R8312	ERJ2RHD102X	1K 2W	[M]
R8313	ERJ2RHD912X	9.1K 2W	[M]
R8314	ERJ2GE0R00X	0 2W	[M]
R8321	ERJ3RED680V	68 3W	[M]
R8322	ERJ3GEY0R00V	0 1/16W	[M]
R8325	ERJ3RED680V	68 3W	[M]
R8326	ERJ3GEY0R00V	0 1/16W	[M]
R8331	ERJ3RED680V	68 3W	[M]
R8332	ERJ3GEY0R00V	0 1/16W	[M]
R8335	ERJ3RED680V	68 3W	[M]
R8341	ERJ3RED680V	68 3W	[M]
R8401	ERJ2GEJ101X	100 2W	[M]
R8420	ERJ2GEJ222X	2.2K 2W	[M]
R8421	ERJ2GE0R00X	0 2W	[M]
R8531	ERJ2GEJ152X	1.5K 2W	[M]
R8532	ERJ2GEJ222X	2.2K 2W	[M]
R8533	ERJ2GE0R00X	0 2W	[M]
R8541	ERJ2GEJ153X	15K 2W	[M]
R8551	ERJ2GE0R00X	0 2W	[M]
R8552	ERJ2GEJ102X	1K 2W	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
R8553	ERJ2GEJ102X	1K 2W	[M]
R8554	ERJ2GEJ680X	68 2W	[M]
R8555	ERJ2GEJ2R2X	2.2 2W	[M]
R8556	ERJ3GEYJ560V	56 1/16W	[M]
R8557	ERJ3GEYJ510V	51 1/16W	[M]
R8558	ERJ2GEJ473X	47K 2W	[M]
R8559	ERJ2GEJ153X	15K 2W	[M]
R8561	ERJ2GE0R00X	0 2W	[M]
R8562	ERJ2GEJ102X	1K 2W	[M]
R8563	ERJ2GEJ102X	1K 2W	[M]
R8564	ERJ2GEJ220X	22 2W	[M]
R8565	ERJ2GEJ2R2X	2.2 2W	[M]
R8566	ERJ3GEYJ560V	56 1/16W	[M]
R8567	ERJ3GEYJ510V	51 1/16W	[M]
R8568	ERJ2GEJ473X	47K 2W	[M]
R8601	ERJ2GEJ104X	100K 2W	[M]
R8611	ERJ2GEJ101X	100 2W	[M]
R8621	ERJ2GEJ105X	1M 2W	[M]
R8622	ERJ2RHD102X	1K 2W	[M]
RX8001	D1H410320002	CHIP RESISTOR	[M]
RX8011	D1H88204A024	CHIP RESISTOR	[M]
RX8012	D1H88204A024	CHIP RESISTOR	[M]
RX8013	D1H88204A024	CHIP RESISTOR	[M]
RX8014	D1H88204A024	CHIP RESISTOR	[M]
RX8015	D1H88204A024	CHIP RESISTOR	[M]
RX8016	D1H88204A024	CHIP RESISTOR	[M]
RX8017	D1H88204A024	CHIP RESISTOR	[M]
RX8018	D1H422020001	CHIP RESISTOR	[M]
RX8019	D1H422020001	CHIP RESISTOR	[M]
RX8020	D1H422020001	CHIP RESISTOR	[M]
RX8031	D1H447220001	CHIP RESISTOR	[M]
RX8032	D1H447220001	CHIP RESISTOR	[M]
RX8111	D1H422320002	CHIP RESISTOR	[M]
RX8401	D1H410120001	CHIP RESISTOR	[M]
RX8402	D1H410120001	CHIP RESISTOR	[M]
RX8403	D1H410120001	CHIP RESISTOR	[M]
RX8531	D1H456020001	CHIP RESISTOR	[M]
RX8532	D1H85604A024	CHIP RESISTOR	[M]
RX8533	D1H456020001	CHIP RESISTOR	[M]
RX8534	D1H456020001	CHIP RESISTOR	[M]
RX8611	D1H447220001	CHIP RESISTOR	[M]
RX8691	D1H410320002	CHIP RESISTOR	[M]
W10	ERJ3GEY0R00V	CHIP JUMPER	[M]
W11	ERJ3GEY0R00V	CHIP JUMPER	[M]
W12	ERJ3GEY0R00V	CHIP JUMPER	[M]
W13	ERJ3GEY0R00V	CHIP JUMPER	[M]
W14	ERJ3GEY0R00V	CHIP JUMPER	[M]
W15	ERJ3GEY0R00V	CHIP JUMPER	[M]
W16	ERJ3GEY0R00V	CHIP JUMPER	[M]
W601	ERJ3GEY0R00V	CHIP JUMPER	[M]
W602	ERJ3GEY0R00V	CHIP JUMPER	[M]
W1008	ERJ3GEY0R00V	CHIP JUMPER	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
W1101	ERJ3GEY0R00V	CHIP JUMPER	[M]
W1103	ERJ3GEY0R00V	CHIP JUMPER	[M]
W1104	ERJ6GEY0R00V	CHIP RESISTOR	[M]
W1105	ERJ6GEY0R00V	CHIP RESISTOR	[M]
W1106	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2242	ERJ6GEY0R00V	CHIP RESISTOR	[M]
W2500	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2501	ERJ6GEY0R00V	CHIP RESISTOR	[M]
W2502	ERJ6GEY0R00V	CHIP RESISTOR	[M]
W2503	ERJ6GEY0R00V	CHIP RESISTOR	[M]
W2504	ERJ6GEY0R00V	CHIP RESISTOR	[M]
W2505	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2506	ERJ6GEY0R00V	CHIP RESISTOR	[M]
W2508	ERJ6GEY0R00V	CHIP RESISTOR	[M]
W2509	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2510	ERJ6GEY0R00V	CHIP RESISTOR	[M]
W2511	ERJ6GEY0R00V	CHIP RESISTOR	[M]
W2512	ERJ6GEY0R00V	CHIP RESISTOR	[M]
W2513	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2514	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2515	ERJ6GEY0R00V	CHIP RESISTOR	[M]
W2516	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2517	ERJ6GEY0R00V	CHIP RESISTOR	[M]
W2518	ERJ6GEY0R00V	CHIP RESISTOR	[M]
W2519	ERJ6GEY0R00V	CHIP RESISTOR	[M]
W2525	ERJ6GEY0R00V	CHIP RESISTOR	[M]
W2526	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2527	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2529	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2530	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2531	ERJ6GEY0R00V	CHIP RESISTOR	[M]
W2532	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2533	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2534	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2535	ERJ6GEY0R00V	CHIP RESISTOR	[M]
W2536	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2537	ERJ6GEY0R00V	CHIP RESISTOR	[M]
W2538	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2539	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2540	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2541	ERJ6GEY0R00V	CHIP RESISTOR	[M]
W2542	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2543	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2544	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2545	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2546	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2547	ERJ6GEY0R00V	CHIP RESISTOR	[M]
W2548	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2549	ERJ6GEY0R00V	CHIP RESISTOR	[M]
W2550	ERJ6GEY0R00V	CHIP RESISTOR	[M]
W2551	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2553	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2554	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2555	ERJ6GEY0R00V	CHIP RESISTOR	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
W2556	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2557	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2561	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2564	ERJ6GEY0R00V	CHIP RESISTOR	[M]
W2566	ERJ6GEY0R00V	CHIP RESISTOR	[M]
W2567	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2568	ERJ6GEY0R00V	CHIP RESISTOR	[M]
W2569	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2610	ERJ6GEY0R00V	CHIP RESISTOR	[M]
W2612	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2614	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2616	ERJ3GEY0R00V	CHIP JUMPER	[M]
W2620	ERJ6GEY0R00V	CHIP RESISTOR	[M]
W5190	ERJ6GEY0R00V	CHIP RESISTOR	[M]
W5714	ERJ6GEY0R00V	CHIP RESISTOR	[M]
W5715	ERJ3GEY0R00V	CHIP JUMPER	[M]
W5716	ERJ3GEY0R00V	CHIP JUMPER	[M]
W5718	ERJ3GEY0R00V	CHIP JUMPER	[M]
W5723	ERJ3GEY0R00V	CHIP JUMPER	[M]
W5738	ERJ6GEY0R00V	CHIP RESISTOR	[M]
W5739	ERJ6GEY0R00V	CHIP RESISTOR	[M]
W5743	ERJ6GEY0R00V	CHIP RESISTOR	[M]
W5746	ERJ6GEY0R00V	CHIP RESISTOR	[M]
W5792	ERJ3GEY0R00V	CHIP JUMPER	[M]
W5793	ERJ6GEY0R00V	CHIP RESISTOR	[M]
W6901	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6902	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6903	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6904	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6905	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6906	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6908	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6909	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6910	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6911	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6912	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6913	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6914	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6915	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6916	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6918	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6919	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6920	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6921	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6922	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6923	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6924	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6925	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6926	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6927	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6928	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6929	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6930	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6931	ERJ3GEY0R00V	CHIP JUMPER	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
W6932	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6933	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6934	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6935	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6936	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6937	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6938	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6939	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6940	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6941	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6942	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6943	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6944	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6945	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6946	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6947	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6948	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6951	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6952	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6953	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6954	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6955	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6957	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6958	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6959	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6960	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6961	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6962	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6963	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6964	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6965	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6966	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6967	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6968	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6969	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6970	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6971	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6972	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6973	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6974	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6975	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6976	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6977	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6978	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6979	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6980	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6981	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6982	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6983	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6984	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6985	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6986	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6987	ERJ3GEY0R00V	CHIP JUMPER	[M]
W6988	ERJ3GEY0R00V	CHIP JUMPER	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
W6989	ERJ3GEY0R00V	CHIP JUMPER	[M]
		WIRES	
K8251	ERJ3GEY0R00V	CHIP JUMPER	[M]
K8321	ERJ2GE0R00X	CHIP JUMPER	[M]
K8325	ERJ2GE0R00X	CHIP JUMPER	[M]
K8331	ERJ2GE0R00X	CHIP JUMPER	[M]
K8335	ERJ2GE0R00X	CHIP JUMPER	[M]
K8341	ERJ2GE0R00X	CHIP JUMPER	[M]
K8421	ERJ3GEY0R00V	CHIP JUMPER	[M]
		CAPACITORS	
C984	ECA1EAK100XE	10 25V	[M]
C1001	ECA1CM221B	220 16V	[M]
C1002	ECJ1VB1H104K	0.1 50V	[M]
C1004	ECJ1VB1H103K	0.01 50V	[M]
C1005	ECJ1VB1H103K	0.01 50V	[M]
C1006	ECJ1VB1H104K	0.1 50V	[M]
C1007	ECEA1AKA330B	33 10V	[M]
C1008	ECJ1VB1C105K	1 16V	[M]
C1009	ECJ1VB1C105K	1 16V	[M]
C1010	ECJ1VB1C105K	1 16V	[M]
C1011	ECJ1VB1H103K	0.01 50V	[M]
C1012	ECA1AM221B	220 10V	[M]
C1014	ECA1AM221B	220 10V	[M]
C1015	ECA1AM221B	220 10V	[M]
C1016	ECA1AM221B	220 10V	[M]
C1017	ECA1AM221B	220 10V	[M]
C1020	ECEA1HKA4R7B	4.7 50V	[M]
C1100	ECJ1VC1H101J	100P 50V	[M]
C1200	ECJ1VC1H101J	100P 50V	[M]
C2000	ECJ1VB1H104K	0.1 50V	[M]
C2001	ECJ1VB1H104K	0.1 50V	[M]
C2003	ECA1HM220B	22 50V	[M]
C2004	ECJ1VB1H103K	0.01 50V	[M]
C2006	ECEA1HKA4R7B	4.7 50V	[M]
C2007	ECJ1VB1C104K	0.1 16V	[M]
C2008	ECA1AM102B	1000 10V	[M]
C2009	ECJ1VB1H104K	0.1 50V	[M]
C2010	ECJ1VB1H331K	330P 50V	[M]
C2011	ECJ1VB1H331K	330P 50V	[M]
C2012	ECJ1VB1H331K	330P 50V	[M]
C2013	ECJ1VB1H223K	0.022 50V	[M]
C2017	ECJ1VB1H103K	0.01 50V	[M]
C2018	ECA1EAK470XB	47 25V	[M]
C2019	ECA1EAK470XB	47 25V	[M]
C2020	ECJ1VB1H103K	0.01 50V	[M]
C2021	ECA1AM221B	220 10V	[M]
C2022	EEUFM1A681B	680P 10V	[M]
C2023	ECJ1VB1H221K	220P 50V	[M]
C2024	ECJ1VB1H221K	220P 50V	[M]
C2026	ECJ1VB1A105K	1 10V	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
C2101	ECJ1VB1C105K	1 10V	[M]
C2111	ECJ1VB1C105K	1 10V	[M]
C2112	ECJ1VB1H471K	470P 50V	[M]
C2114	ECJ1VB1H562K	5600P 50V	[M]
C2115	ECJ1VC1H181J	180P 50V	[M]
C2117	ECJ1VB1C104K	0.1 16V	[M]
C2118	ECJ1VB1C104K	0.1 16V	[M]
C2119	ECJ1VB1C105K	1 16V	[M]
C2120	ECJ1VB1C823K	0.082 16V	[M]
C2121	ECJ1VB1H104K	0.1 50V	[M]
C2161	ECJ1VB1C393K	0.039 16V	[M]
C2162	ECJ1VB1H221K	220P 50V	[M]
C2164	ECJ1VB1H221K	220P 50V	[M]
C2169	ECJ1VB1H103K	0.01 50V	[M]
C2170	ECJ1VB1C105K	1 16V	[M]
C2171	ECEA1HKA4R7B	4.7 50V	[M]
C2172	ECJ1VC1H101J	100P 50V	[M]
C2177	ECJ1VB1A105K	1 10V	[M]
C2178	ECJ1VC1H101J	100P 50V	[M]
C2179	ECJ1VC1H470J	47P 50V	[M]
C2180	ECJ1VB1H104K	0.1 50V	[M]
C2181	ECJ1VB1H102K	1000P 50V	[M]
C2183	ECJ1VB1A105K	1 10V	[M]
C2184	ECJ1VB1C105K	1 10V	[M]
C2185	ECJ1VB1C105K	1 10V	[M]
C2186	ECJ1VB1H102K	1000P 50V	[M]
C2187	ECJ1VB1H102K	1000P 50V	[M]
C2188	ECJ1VC1H101J	100P 50V	[M]
C2189	ECJ1VB1C104K	0.1 16V	[M]
C2194	ECJ1VB1H331K	330P 50V	[M]
C2195	ECJ1VB1A105K	1 10V	[M]
C2201	ECJ1VB1C105K	1 16V	[M]
C2211	ECJ1VB1C105K	1 16V	[M]
C2212	ECJ1VB1H471K	470P 50V	[M]
C2214	ECJ1VB1H562K	5600P 50V	[M]
C2215	ECJ1VC1H181J	180P 50V	[M]
C2217	ECJ1VB1C104K	0.1 16V	[M]
C2218	ECJ1VB1C104K	0.1 16V	[M]
C2219	ECJ1VB1C105K	1 16V	[M]
C2220	ECJ1VB1C823K	0.082 16V	[M]
C2221	ECJ1VB1H104K	0.1 50V	[M]
C2261	ECJ1VB1C393K	0.039 16V	[M]
C2262	ECJ1VB1H221K	220P 50V	[M]
C2264	ECJ1VB1H221K	220P 50V	[M]
C2270	ECJ1VB1C105K	1 16V	[M]
C2272	ECJ1VC1H101J	100P 50V	[M]
C2277	ECJ1VB1A105K	1 10V	[M]
C2278	ECJ1VC1H101J	100P 50V	[M]
C2279	ECJ1VC1H470J	47P 50V	[M]
C2280	ECJ1VB1H104K	0.1 50V	[M]
C2281	ECJ1VB1H102K	1000P 50V	[M]
C2283	ECJ1VB1A105K	1 10V	[M]
C2284	ECJ1VB1C105K	1 10V	[M]
C2285	ECJ1VB1C105K	1 10V	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
C2286	ECJ1VB1H102K	1000P 50V	[M]
C2287	ECJ1VB1H102K	1000P 50V	[M]
C2288	ECJ1VC1H101J	100P 50V	[M]
C2289	ECJ1VB1C104K	0.1 16V	[M]
C2294	ECJ1VB1H331K	330P 50V	[M]
C2295	ECJ1VB1A105K	1 10V	[M]
C2300	ECJ1VB0J105K	1 10V	[M]
C2301	ECJ1VB1A105K	1 10V	[M]
C2302	ECJ1VB1C333K	0.033 16V	[M]
C2303	ECJ1VB1H104K	0.1 50V	[M]
C2304	ECJ1VB0J105K	1 6.3V	[M]
C2305	ECJ1VB1H332K	3300P 50V	[M]
C2306	ECJ1VB1A154K	0.15 10V	[M]
C2307	ECJ1VB0J105K	1 6.3V	[M]
C2308	ECJ1VB1A105K	1 6.3V	[M]
C2309	ECJ1VB1A105K	1 6.3V	[M]
C2312	ECJ1VB1A105K	1 6.3V	[M]
C2313	ECJ1VC1H101J	100P 50V	[M]
C2316	ECJ1VB1H103K	0.01 50V	[M]
C2318	ECEA1HKA4R7B	4.7 50V	[M]
C2319	ECJ1VB1H223K	0.022 50V	[M]
C2321	ECJ1VB1H103K	0.01 50V	[M]
C2322	ECJ2YB0J475K	4.7 6.3V	[M]
C2323	ECJ1VB1H471K	470P 50V	[M]
C2324	ECJ1VB1C183K	0.018 16V	[M]
C2325	ECJ1VB1C473K	0.047 16V	[M]
C2326	ECJ1VB1H122K	1200P 50V	[M]
C2327	ECJ1VB1H122K	1200P 50V	[M]
C2328	ECJ1VB1C224K	0.22 16V	[M]
C2400	ECJ1VB0J105K	1 6.3V	[M]
C2401	ECJ2YB0J475K	4.7 6.3V	[M]
C2402	ECJ1VB1C333K	0.033 16V	[M]
C2403	ECJ1VB1H104K	0.1 50V	[M]
C2404	ECJ1VB0J105K	1 6.3V	[M]
C2405	ECJ1VB1H332K	3300P 50V	[M]
C2406	ECJ1VB1A154K	0.15 10V	[M]
C2407	ECJ1VB0J105K	1 6.3V	[M]
C2408	ECJ1VB1A105K	1 6.3V	[M]
C2412	ECJ1VB1A105K	1 6.3V	[M]
C2413	ECJ1VC1H101J	100P 50V	[M]
C2415	ECJ1VB1C823K	0.082 16V	[M]
C2416	ECJ1VB1H103K	0.01 50V	[M]
C2421	ECJ1VB1H103K	0.01 50V	[M]
C2422	ECJ1VB1A105K	1 10V	[M]
C2423	ECJ1VB1H471K	470P 50V	[M]
C2424	ECJ1VB1C183K	0.018 16V	[M]
C2425	ECJ1VB1C473K	0.047 16V	[M]
C2426	ECJ1VB1H122K	1200P 50V	[M]
C2427	ECJ1VB1H122K	1200P 50V	[M]
C2428	ECJ1VB1C224K	0.22 16V	[M]
C2429	ECJ1VB1H103K	0.01 50V	[M]
C2430	ECJ1VB1H103K	0.01 50V	[M]
C2500	ECJ1VB0J105K	1 6.3V	[M]
C2501	ECJ1VB0J105K	1 6.3V	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
C2502	ECJ1VB1C393K	0.039 16V	[M]
C2503	ECJ1VB1C823K	0.082 16V	[M]
C2506	ECJ1VB1A105K	1 10V	[M]
C2507	ECJ1VB1H471K	470P 50V	[M]
C2509	ECJ1VB1H562K	5600P 50V	[M]
C2600	ECJ1VB1A105K	1 10V	[M]
C2601	ECJ1VB1C823K	0.082 16V	[M]
C2602	ECEA1HKA4R7B	4.7 50V	[M]
C2603	ECJ1VB1A105K	1 10V	[M]
C2604	ECJ1VB1H104K	0.1 50V	[M]
C2605	ECJ1VB1A474K	0.47 10V	[M]
C2606	ECA1HM220B	22 50V	[M]
C2607	ECA1HM220B	22 50V	[M]
C2608	ECEA1HKA100B	10 50V	[M]
C2609	ECJ1VB1A334K	0.33 10V	[M]
C2610	ECJ1VB1A474K	0.47 10V	[M]
C2611	ECJ1VB1H123K	0.012 50V	[M]
C2612	ECJ1VB1H332K	3300P 50V	[M]
C2615	ECJ1VB1H222K	2200P 50V	[M]
C2617	ECJ1VB1A124K	0.12 10V	[M]
C2619	ECEA1HKA100B	10 50V	[M]
C2620	ECEA1HKA100B	10 50V	[M]
C2621	ECJ1VB1A105K	1 10V	[M]
C2624	ECJ1VB1H103K	0.01 50V	[M]
C2625	ECJ1VB1H103K	0.01 50V	[M]
C2700	ECJ1VC1H470J	47P 50V	[M]
C2701	ECJ1VB1H102K	1000P 50V	[M]
C2702	ECJ1VC1H470J	47P 50V	[M]
C2703	ECEA1AKA330B	33 10V	[M]
C2704	ECJ1VB1H103K	0.01 50V	[M]
C2705	ECJ1VC1H470J	47P 50V	[M]
C2706	ECEA1AKA330B	33 10V	[M]
C2707	ECA1HM220B	22 50V	[M]
C2708	ECJ1VB1H331K	330P 50V	[M]
C2801	ECJ1VB1H104K	0.1 50V	[M]
C2802	ECA0JM102B	1000 6.3V	[M]
C2803	ECJ1VB0J105K	1 6.3V	[M]
C2804	ECJ1VB0J105K	1 6.3V	[M]
C2805	ECA0JM331B	330 6.3V	[M]
C2806	ECA0JM331B	330 6.3V	[M]
C2807	ECJ1VB1H103K	0.01 50V	[M]
C2808	ECA1AM221B	220 10V	[M]
C2809	ECA1AM221B	220 10V	[M]
C2810	ECJ1VB1H103K	0.01 50V	[M]
C2811	ECJ1VB1H104K	0.1 50V	[M]
C2812	ECJ1VB1H104K	0.1 50V	[M]
C2817	ECJ1VB1C105K	1 16V	[M]
C2818	ECJ1VB1C105K	1 16V	[M]
C2819	ECJ1VC1H101J	100P 50V	[M]
C2820	ECJ1VC1H101J	100P 50V	[M]
C2821	ECJ1VC1H101J	100P 50V	[M]
C2822	ECJ1VC1H101J	100P 50V	[M]
C2823	ECJ1VC1H101J	100P 50V	[M]
C2825	ECJ1VC1H101J	100P 50V	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
C2826	ECJ1VC1H101J	100P 50V	[M]
C2827	ECJ1VC1H101J	100P 50V	[M]
C2828	ECJ1VC1H101J	100P 50V	[M]
C2829	ECJ1VC1H101J	100P 50V	[M]
C2830	ECJ1VB1H561K	560P 50V	[M]
C2831	ECJ1VB1H561K	560P 50V	[M]
C2832	ECJ1VB1H561K	560P 50V	[M]
C2833	ECJ1VB1H561K	560P 50V	[M]
C2840	ECA0JM102B	1000 6.3V	[M]
C2841	ECA0JM102B	1000 6.3V	[M]
C2901	ECA1HM101B	100 50V	[M]
C2902	ECJ1VB1H103K	0.01 50V	[M]
C2903	ECJ1VB1H103K	0.01 50V	[M]
C2906	ECJ1VB1H103K	0.01 50V	[M]
C2908	ECA1CM221B	220 16V	[M]
C2910	ECJ1VB1H103K	0.01 50V	[M]
C2913	ECA1CM221B	220 16V	[M]
C2914	ECEA1AKA330B	33 10V	[M]
C2919	ECJ1VC1H101J	100P 50V	[M]
C2920	ECJ1VB1H103K	0.01 50V	[M]
C2921	ECA1HM101B	100 50V	[M]
C2922	EEUFC0J821B	820P 6.3V	[M]
C2923	ECA1CM221B	220 16V	[M]
C2924	ECJ1VB1H103K	0.01 50V	[M]
C2925	ECA1AM221B	220 10V	[M]
C2930	ECJ1VB1A105K	1 10V	[M]
C2940	ECJ1VB1H103K	0.01 50V	[M]
C2941	ECA1CM221B	220 16V	[M]
C2945	ECJ1VB1H103K	0.01 50V	[M]
C2946	ECA1CM470B	47 16V	[M]
C2948	ECJ1VB1H103K	0.01 50V	[M]
C2949	ECEA1HKA4R7B	4.7 50V	[M]
C2952	ECJ1VB1H103K	0.01 50V	[M]
C2956	ECJ1VB1H104K	0.1 50V	[M]
C2959	ECJ1VB1C104K	0.1 16V	[M]
C2960	ECJ1VB1C104K	0.1 16V	[M]
C2961	ECJ1VB1C104K	0.1 16V	[M]
C2962	ECA1CM221B	220 16V	[M]
C2963	ECJ1VB1C104K	0.1 16V	[M]
C2964	ECJ1VB1C104K	0.1 16V	[M]
C2965	ECJ1VB1C104K	0.1 16V	[M]
C2966	ECJ1VB1H104K	0.1 50V	[M]
C2967	ECA1AM221B	220 10V	[M]
C2968	ECA1AM101B	100 10V	[M]
C5000	ECJ1VB1H102K	1000P 50V	[M]
C5001	ECJ1VB1H102K	1000P 50V	[M]
C5002	ECJ1VB1H104K	0.1 50V	[M]
C5003	ECJ1VB1H104K	0.1 50V	[M]
C5004	ECJ1VB1H104K	0.1 50V	[M]
C5005	ECJ1VB1H104K	0.1 50V	[M]
C5006	ECJ1VB1H331K	330P 50V	[M]
C5007	ECJ1VB1H331K	330P 50V	[M]
C5008	ECJ1VB1H153K	0.015 50V	[M]
C5009	ECJ1VB1H153K	0.015 50V	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
C5010	ECJ2VC2A221J	220P 100V	[M]
C5011	ECJ2VC2A221J	220P 100V	[M]
C5012	ECJ2VC2A221J	220P 100V	[M]
C5013	ECJ2VC2A221J	220P 100V	[M]
C5014	ECQV1H474JL3	0.47 50V	[M]
C5015	ECQV1H474JL3	0.47 50V	[M]
C5016	ECJ1VB1H104K	0.1 50V	[M]
C5017	ECJ1VB1H104K	0.1 50V	[M]
C5018	ECJ3YB2A104K	0.1 100V	[M]
C5019	ECJ3YB2A104K	0.1 100V	[M]
C5020	ECJ1VB1H104K	0.1 50V	[M]
C5021	ECJ3YB2A104K	0.1 100V	[M]
C5022	ECJ1VB1H104K	0.1 50V	[M]
C5023	ECJ3YB2A104K	0.1 100V	[M]
C5024	ECJ1VB1H104K	0.1 50V	[M]
C5025	ECJ1VB1H104K	0.1 50V	[M]
C5026	ECJ3YB2A104K	0.1 100V	[M]
C5027	ECJ1VB1H104K	0.1 50V	[M]
C5028	ECJ1VB1H104K	0.1 50V	[M]
C5029	ECJ3YB2A104K	0.1 100V	[M]
C5030	ECJ1VC1H221J	220P 50V	[M]
C5031	ECJ1VB1C224K	0.22 16V	[M]
C5034	ECJ1VB1H103K	0.01 50V	[M]
C5035	ECJ1VB1H103K	0.01 50V	[M]
C5036	ECJ1VB1H103K	0.01 50V	[M]
C5037	ECJ1VB1H103K	0.01 50V	[M]
C5040	ECA2AM220B	22 100V	[M]
C5106	ECJ1VB1H104K	0.1 50V	[M]
C5107	ECJ1VB1H104K	0.1 50V	[M]
C5117	ECJ1VB1H102K	1000P 50V	[M]
C5119	ECJ1VB1H102K	1000P 50V	[M]
C5120	ECJ1VB1H104K	0.1 50V	[M]
C5121	ECJ1VB1H104K	0.1 50V	[M]
C5133	ECEA1HN470UB	47 50V	[M]
C5134	ECJ1VB1H103K	0.01 50V	[M]
C5135	ECJ1VB1H103K	0.01 50V	[M]
C5136	ECJ1VB1H103K	0.01 50V	[M]
C5137	ECJ1VB1H103K	0.01 50V	[M]
C5200	ECJ1VB1H104K	0.1 50V	[M]
C5201	ECJ1VB1H153K	0.015 50V	[M]
C5202	ECJ1VB1C224K	0.22 16V	[M]
C5203	ECJ2VC2A221J	220P 100V	[M]
C5204	ECJ1VB1H153K	0.015 50V	[M]
C5205	ECJ2VC2A221J	220P 100V	[M]
C5206	ECJ1VB1H104K	0.1 50V	[M]
C5207	ECJ3YB2A104K	0.1 100V	[M]
C5208	ECJ1VB1H104K	0.1 50V	[M]
C5209	ECJ1VB1H104K	0.1 50V	[M]
C5210	ECJ3YB2A104K	0.1 100V	[M]
C5211	ECJ2VC2A221J	220P 100V	[M]
C5212	ECJ1VC1H221J	220P 50V	[M]
C5213	ECJ3YB2A104K	0.1 100V	[M]
C5214	ECJ1VB1H104K	0.1 50V	[M]
C5215	ECJ3YB2A104K	0.1 100V	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
C5216	ECJ1VB1H331K	330P 50V	[M]
C5217	ECJ3YB2A104K	0.1 100V	[M]
C5218	ECJ2VC2A221J	220P 100V	[M]
C5219	ECJ3YB2A104K	0.1 100V	[M]
C5220	ECJ1VB1H104K	0.1 50V	[M]
C5221	ECJ1VB1H102K	1000P 50V	[M]
C5222	ECJ1VB1H104K	0.1 50V	[M]
C5223	ECJ1VB1H104K	0.1 50V	[M]
C5224	ECJ1VB1H331K	330P 50V	[M]
C5225	ECQV1H474JL3	0.47 50V	[M]
C5226	ECJ1VB1H104K	0.1 50V	[M]
C5227	ECJ1VB1H104K	0.1 50V	[M]
C5228	ECQV1H474JL3	0.47 50V	[M]
C5231	ECJ1VB1H103K	0.01 50V	[M]
C5232	ECJ1VB1H103K	0.01 50V	[M]
C5240	ECA2AM220B	22 100V	[M]
C5300	ECQV1H474JL3	0.47 50V	[M]
C5301	ECJ1VB1H104K	0.1 50V	[M]
C5302	ECJ1VB1H104K	0.1 50V	[M]
C5303	ECJ1VB1H104K	0.1 50V	[M]
C5304	ECJ1VB1H331K	330P 50V	[M]
C5305	ECJ1VB1H104K	0.1 50V	[M]
C5306	ECJ1VB1H104K	0.1 50V	[M]
C5307	ECJ2VC2A221J	220P 100V	[M]
C5308	ECJ3YB2A104K	0.1 100V	[M]
C5309	ECJ3YB2A104K	0.1 100V	[M]
C5310	ECJ3YB2A104K	0.1 100V	[M]
C5311	ECJ2VC2A221J	220P 100V	[M]
C5312	ECJ1VB1H331K	330P 50V	[M]
C5313	ECJ1VB1H104K	0.1 50V	[M]
C5314	ECJ1VB1A474K	0.47 10V	[M]
C5315	ECJ1VB1H102K	1000P 50V	[M]
C5316	ECJ1VB1H104K	0.1 50V	[M]
C5317	ECJ1VB1A474K	0.47 10V	[M]
C5318	ECJ3YB2A104K	0.1 100V	[M]
C5319	ECJ3YB2A104K	0.1 100V	[M]
C5320	ECJ3YB2A104K	0.1 100V	[M]
C5321	ECJ1VB1C224K	0.22 16V	[M]
C5322	ECJ1VB1H153K	0.015 50V	[M]
C5323	ECJ1VC1H221J	220P 50V	[M]
C5324	ECJ1VB1H153K	0.015 50V	[M]
C5325	ECJ2VC2A221J	220P 100V	[M]
C5326	ECJ2VC2A221J	220P 100V	[M]
C5327	ECJ1VB1H104K	0.1 50V	[M]
C5328	ECQV1H474JL3	0.47 50V	[M]
C5331	ECJ1VB1H103K	0.01 50V	[M]
C5332	ECJ1VB1H103K	0.01 50V	[M]
C5340	ECA2AM220B	22 100V	[M]
C5400	ECQV1H474JL3	0.47 50V	[M]
C5401	ECJ1VB1H104K	0.1 50V	[M]
C5402	ECJ1VB1H104K	0.1 50V	[M]
C5403	ECJ1VB1H104K	0.1 50V	[M]
C5404	ECJ1VB1H331K	330P 50V	[M]
C5405	ECJ1VB1H104K	0.1 50V	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
C5406	ECJ1VB1H104K	0.1 50V	[M]
C5407	ECJ2VC2A221J	220P 100V	[M]
C5408	ECJ3YB2A104K	0.1 100V	[M]
C5409	ECJ3YB2A104K	0.1 100V	[M]
C5410	ECJ3YB2A104K	0.1 100V	[M]
C5411	ECJ2VC2A221J	220P 100V	[M]
C5412	ECJ1VB1H331K	330P 50V	[M]
C5413	ECJ1VB1H104K	0.1 50V	[M]
C5416	ECJ1VB1H104K	0.1 50V	[M]
C5418	ECJ3YB2A104K	0.1 100V	[M]
C5419	ECJ3YB2A104K	0.1 100V	[M]
C5420	ECJ3YB2A104K	0.1 100V	[M]
C5421	ECJ1VB1C224K	0.22 16V	[M]
C5422	ECJ1VB1H153K	0.015 50V	[M]
C5423	ECJ1VC1H221J	220P 50V	[M]
C5424	ECJ1VB1H153K	0.015 50V	[M]
C5425	ECJ2VC2A221J	220P 100V	[M]
C5426	ECJ2VC2A221J	220P 100V	[M]
C5427	ECJ1VB1H104K	0.1 50V	[M]
C5428	ECQV1H474JL3	0.47 50V	[M]
C5440	ECA2AM220B	22 100V	[M]
C5508	ECA1VM471B	470 35V	[M]
C5509	ECA1VM471B	470 35V	[M]
C5510	ECA1VM471B	470 35V	[M]
C5511	ECA1VM471B	470 35V	[M]
C5514	ECJ1VB1H104K	0.1 50V	[M]
C5515	ECJ1VB1H104K	0.1 50V	[M]
C5516	ECA1VM471B	470 35V	[M]
C5517	ECA1VM471B	470 35V	[M]
C5518	ECJ1VB1H104K	0.1 50V	[M]
C5519	ECJ1VB1H104K	0.1 50V	[M]
C5550	ECJ1VB1H471K	470P 50V	[M]
C5551	ECJ1VB1H391K	390P 50V	[M]
C5552	ECJ1VB1H391K	390P 50V	[M]
C5553	ECJ1VC1H101J	100P 50V	[M]
C5555	ECJ3YB1C106K	10 16V	[M]
C5556	ECJ1VB1H471K	470P 50V	[M]
C5557	ECA0JM331B	330 6.3V	[M]
C5601	ECEA1HKA4R7B	4.7 50V	[M]
C5602	ECEA1HKA4R7B	4.7 50V	[M]
C5701	ECQU2A224MLC	0.22 100V	[M] ⚠
C5706	ECQU2A224MLC	0.22 100V	[M] ⚠
C5708	ECQE6103KF	CAPACITOR	[M]
C5709	ECJ1VB1H471K	470P 50V	[M]
C5710	ECKE3D152KBP	1500P 2000V	[M]
C5711	F2A1H5600009	56P 50V	[M]
C5712	ECJ1VB1H221K	220P 50V	[M]
C5713	ECJ1VB1H102K	1000P 50V	[M]
C5715	ECA1AM101B	100 10V	[M]
C5716	ECEC2GB181DJ	180 250V	[M]
C5717	F2A1V222A061	2200P 35V	[M]
C5718	F2A1V222A061	2200P 35V	[M]
C5720	ECJ1VB1H104K	0.1 50V	[M]
C5722	ECJ1VB1H104K	0.1 50V	[M]

[illegible]	[illegible]	[illegible]	[illegible]

Ref. No.	Part No.	Part Name & Description	Remarks
C5725	ECEA1HKA4R7B	4.7 50V	[M]
C5727	ECCN3A470KGE	47P 1000V	[M]
C5729	ECA1HM220B	22 50V	[M]
C5732	ECJ1VB1H104K	0.1 50V	[M]
C5733	ECA1CM221B	220 16V	[M]
C5736	F1BAF1020020	1000P 10V	[M] ⚠
C5737	F1BAF1020020	1000P 10V	[M] ⚠
C5738	ECJ1VB1H681K	680P 50V	[M]
C5739	ECEA1HKA100B	10 50V	[M]
C5741	ECA1AM221B	220 10V	[M]
C5742	F2A1V4710036	470P 35V	[M]
C5746	ECJ1VB1H104K	0.1 50V	[M]
C5747	ECJ1VB1H104K	0.1 50V	[M]
C5748	ECJ1VB1H104K	0.1 50V	[M]
C5749	ECJ1VB1H104K	0.1 50V	[M]
C5757	ECJ1VB1H222K	2200P 50V	[M]
C5761	ECJ1VB1H104K	0.1 50V	[M]
C5765	ECEA1AKA101B	100 10V	[M]
C5766	ECEA1AKA221B	220 10V	[M]
C5770	F1B3A122A009	1200P 1000	[M]
C5771	F1B3A122A009	1200P 1000	[M]
C5772	F1J2E1030004	0.01 250V	[M]
C5773	F1B3A122A009	1200P 1000	[M]
C5774	ECJ1VB1H103K	0.01 50V	[M]
C5775	ECJ1VB1H104K	0.1 50V	[M]
C5776	ECJ1VB1H104K	0.1 50V	[M]
C5777	ECJ1VB1H104K	0.1 50V	[M]
C5790	ECJ1VB1H102K	1000P 50V	[M]
C5791	ECA1HM101B	100 50V	[M]
C5792	ECA1AM221B	220 10V	[M]
C5794	ECA1CM470B	47 16V	[M]
C5796	F2A1V4710036	470P 35V	[M]
C5797	ECEA1HKA4R7B	4.7 50V	[M]
C5916	ECA1HM101B	100 50V	[M]
C6101	ECJ1VB1H473K	0.047 50V	[M]
C6201	ECJ1VB1H473K	0.047 50V	[M]
C6801	ECJ1VB1H102K	1000P 50V	[M]
C6805	ECJ1VC1H101K	100P 50V	[M]
C6806	ECJ1VC1H101K	100P 50V	[M]
C6903	ECEA1HKA220B	22 50V	[M]
C6904	ECJ1VB1H102K	1000P 50V	[M]
C6905	ECEA1HKA220B	22 50V	[M]
C6906	ECJ1VC1H101K	100P 50V	[M]
C6909	ECJ1VB1H103K	0.01 50V	[M]
C6910	ECEA0JKA101B	100 6.3V	[M]
C6911	ECJ1VB1H103K	0.01 50V	[M]
C6913	ECEA1HKA3R3B	3.3 50V	[M]
C6916	ECJ1VC1H101K	100P 50V	[M]
C6917	ECJ1VC1H101K	100P 50V	[M]
C6918	ECEA1AKA470B	47 10V	[M]
C6919	ECJ1VC1H101K	100P 50V	[M]
C6920	ECJ1VB1C563K	0.056 16V	[M]
C6921	ECJ1VB1C563K	0.056 16V	[M]
C6922	ECJ1VB1H473K	0.047 50V	[M]

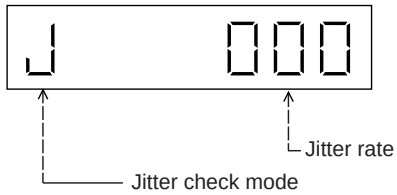
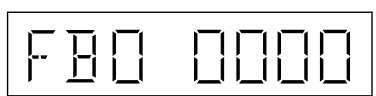
[illegible]	[illegible]	[illegible]	[illegible]

Ref. No.	Part No.	Part Name & Description	Remarks
C6923	ECJ1VB1H473K	0.047 50V	[M]
C8001	EEE0GA331WP	330P 4V	[M]
C8003	ECJ0EF1C104Z	0.1 16V	[M]
C8004	ECJ0EF1C104Z	0.1 16V	[M]
C8005	ECJ0EF1C104Z	0.1 16V	[M]
C8006	ECJ0EF1C104Z	0.1 16V	[M]
C8007	ECJ0EF1C104Z	0.1 16V	[M]
C8008	ECJ0EF1C104Z	0.1 16V	[M]
C8011	F2G0J101A066	100P 6.3V	[M]
C8012	ECJ0EF1C104Z	0.1 16V	[M]
C8013	ECJ0EF1C104Z	0.1 16V	[M]
C8014	ECJ0EF1C104Z	0.1 16V	[M]
C8015	ECJ0EF1C104Z	0.1 16V	[M]
C8016	ECJ0EF1C104Z	0.1 16V	[M]
C8017	ECJ0EF1C104Z	0.1 16V	[M]
C8018	ECJ0EF1C104Z	0.1 16V	[M]
C8019	ECJ0EF1C104Z	0.1 16V	[M]
C8020	ECJ0EF1C104Z	0.1 16V	[M]
C8021	ECJ0EF1C104Z	0.1 16V	[M]
C8022	ECJ0EF1C104Z	0.1 16V	[M]
C8023	ECJ0EF1C104Z	0.1 16V	[M]
C8024	ECJ0EF1C104Z	0.1 16V	[M]
C8025	ECJ0EF1C104Z	0.1 16V	[M]
C8026	ECJ0EF1C104Z	0.1 16V	[M]
C8051	ECJ1VB0J105K	1 6.3V	[M]
C8052	ECJ0EF1C104Z	0.1 16V	[M]
C8053	ECJ0EF1C104Z	0.1 16V	[M]
C8054	ECJ0EC1H221J	220P 50V	[M]
C8055	ECJ1VB0J105K	1 6.3V	[M]
C8056	ECJ0EB1E222K	2200P 25V	[M]
C8057	ECJ1VB0J105K	1 6.3V	[M]
C8111	ECJ0EB1A104K	0.1 10V	[M]
C8112	ECJ1VB0J105K	1 6.3V	[M]
C8113	ECJ0EB1E471K	470P 25V	[M]
C8151	ECJ1VB0J475K	4.7 6.3V	[M]
C8152	ECJ1VB1C105K	1 16V	[M]
C8201	F2G0J101A066	100P 6.3V	[M]
C8202	ECJ0EB1A104K	0.1 10V	[M]
C8203	ECJ0EB1A104K	0.1 10V	[M]
C8211	ECJ0EB1E122K	1200P 25V	[M]
C8221	ECJ0EB1E102K	1000P 25V	[M]
C8222	ECJ0EB1E821K	820P 25V	[M]
C8225	ECJ0EB1E102K	1000P 25V	[M]
C8226	ECJ0EB1E102K	1000P 25V	[M]
C8231	ECJ0EB1A104K	0.1 10V	[M]
C8232	ECJ0EB1A104K	0.1 10V	[M]
C8251	F2G0J221A065	220P 6.3V	[M]
C8252	ECJ0EF1C104Z	0.1 16V	[M]
C8253	ECJ0EF1C104Z	0.1 16V	[M]
C8255	F2G1C220A037	22P 16V	[M]
C8256	ECJ0EF1C104Z	0.1 16V	[M]
C8257	F2G1C470A076	47P 16V	[M]
C8258	ECJ0EF1C104Z	0.1 16V	[M]
C8261	ECJ0EF1C104Z	0.1 16V	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
C8262	ECJ0EF1C104Z	0.1 16V	[M]
C8301	F2G0J221A031	220P 6.3V	[M]
C8302	F2G0J330A031	33P 6.3V	[M]
C8303	ECJ0EB1A104K	0.1 10V	[M]
C8304	ECJ0EB1A104K	0.1 10V	[M]
C8305	ECJ0EB1A104K	0.1 10V	[M]
C8306	ECJ0EB1A104K	0.1 10V	[M]
C8311	ECJ0EB1A104K	0.1 10V	[M]
C8312	ECJ1VB0J105K	1 6.3V	[M]
C8313	ECJ1VB0J105K	1 6.3V	[M]
C8325	ECJ0EF1C104Z	0.1 16V	[M]
C8331	ECJ0EF1C104Z	0.1 16V	[M]
C8401	ECJ0EC1H150J	15P 50V	[M]
C8421	F2G0J101A083	100P 6.3V	[M]
C8422	ECJ0EF1C104Z	0.1 16V	[M]
C8423	F2G0J330A083	33P 6.3V	[M]
C8424	ECJ0EF1C104Z	0.1 16V	[M]
C8426	ECJ0EF1C104Z	0.1 16V	[M]
C8427	ECJ0EF1C104Z	0.1 16V	[M]
C8428	ECJ0EF1C104Z	0.1 16V	[M]
C8501	F2G0J101A031	100P 6.3V	[M]
C8502	ECJ0EF1C104Z	0.1 16V	[M]
C8503	ECJ0EF1C104Z	0.1 16V	[M]
C8504	ECJ0EF1C104Z	0.1 16V	[M]
C8505	ECJ0EF1C104Z	0.1 16V	[M]
C8511	ECJ1VB0J105K	1 6.3V	[M]
C8512	ECJ1VB0J105K	1 6.3V	[M]
C8513	ECJ0EB1A104K	0.1 10V	[M]
C8514	ECJ0EB1A104K	0.1 10V	[M]
C8515	ECJ0EB1A104K	0.1 10V	[M]
C8516	ECJ0EB1A104K	0.1 10V	[M]
C8521	ECJ0EB1A104K	0.1 10V	[M]
C8522	ECJ0EB1A104K	0.1 10V	[M]
C8523	ECJ0EF1C104Z	0.1 16V	[M]
C8524	ECJ0EF1C104Z	0.1 16V	[M]
C8525	ECJ0EB1C562K	5600P 16V	[M]
C8526	ECJ0EB1C183K	0.018 16V	[M]
C8527	ECJ0EB1A333K	0.033 10V	[M]
C8528	ECJ1VB0J105K	1 6.3V	[M]
C8529	ECJ1VB0J105K	1 6.3V	[M]
C8530	ECJ0EF1C104Z	0.1 16V	[M]
C8531	ECJ0EC1H101J	100P 50V	[M]
C8532	ECJ0EC1H221J	220P 50V	[M]
C8533	ECJ0EF1C104Z	0.1 16V	[M]
C8541	ECJ0EB1E472K	4700P 25V	[M]
C8550	F2G0J330A031	33P 6.3V	[M]
C8551	ECJ0EF1C104Z	0.1 16V	[M]
C8552	F2G1C100A072	10P 16V	[M]
C8553	F2G0J470A031	47P 6.3V	[M]
C8554	ECJ1VB0J105K	1 6.3V	[M]
C8561	ECJ0EF1C104Z	0.1 16V	[M]
C8562	F2G1C100A072	10P 16V	[M]
C8563	F2G0J470A031	47P 6.3V	[M]
C8564	ECJ1VB0J105K	1 6.3V	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
C8571	ECJ3YB1A106M	10 10V	[M]
C8572	ECJ0EF1C104Z	0.1 16V	[M]
C8601	ECJ0EF1C104Z	0.1 16V	[M]
C8602	ECJ0EB1C153K	0.015 16V	[M]
C8606	ECJ0EF1C104Z	0.1 16V	[M]
C8611	ECJ0EF1C104Z	0.1 16V	[M]
C8621	ECJ0EC1H120J	12P 50V	[M]
C8622	ECJ0EC1H120J	12P 50V	[M]
C8651	ECJ0EF1C104Z	0.1 16V	[M]
C8652	ECJ0EF1C104Z	0.1 16V	[M]
C8691	ECJ0EF1C104Z	0.1 16V	[M]
C8695	ECJ0EF1C104Z	0.1 16V	[M]

25. Schematic Diagram for printing with letter size

Item		FL Display	Key Operation
Mode Name	Description		Front Key
Jitter check	Jitter check Jitter rate is measured and displayed. Measurement is repeatedly done in the cycle of one second. Read error counter starts from zero upon mode setting. When target block data failed to be read out, the counter advances by one increment. When the failure is caused by minor error, it may be corrected when retried to enable successful reading. In this case, the counter advances by one. When the error persists even after retry, the counter may jump by two or more.	 Jitter rate is shown in decimal notation to one place of decimal. Focus drive value is shown in hexadecimal notation.	In STOP (no disc) mode, press STOP button on the player, and "5" button on the remote control unit. Press STOP or OPEN button to exit. Press "FL Display" on remote control unit for next page (FL Display).
Error code check	Error code check The latest error code stored in the EEPROM IC is displayed.	 Error code (play_err) is expressed in the following convention. Error code = 0 x DAXX is expressed: DVDnn UXX Error code = 0 x DBXX is expressed: → DVDnn HXX Error code = 0 x DXXX is expressed: → DVDnn FXXX Error code = 0 x 0000 is expressed: → DVDnn F--- * "xx" denotes the error code →	In STOP (no disc) mode, press STOP button on the player, and "0" button on the remote control unit. * With pointing of cursor up and down on display. Cancelled automatically 5 seconds later. To exit, press [POWER] button on main unit or remote control.
Initial setting of laser drive current	Initial setting of laser drive current. Initial current value for each of DVD laser and CD laser is separately saved in the EEPROM IC.	 The value denotes the current in decimal notation. The above example shows the initial current is 34mA and 28mA for DVD laser and CD laser respectively when the laser is switched on.	In STOP (no disc) mode, press STOP button on the player, and PAUSE button on the remote control unit. Cancelled automatically 5 seconds later. Press "FL Display" on remote control unit for next page (FL Display) on values of laser drive current.
DVD laser drive current measurement	DVD laser drive current measurement ·DVD laser drive current is measured and the result is displayed together with the initial value stored in the EEPROM IC. After the measurement, DVD laser emission is kept on. It is turned off when POWER key is switched off. (It is also turned off when POWER button on the player is switched off.)	 The value denotes the current in decimal notation. The above example shows the initial current is 34mA and the measured value is 32mA.	In STOP (no disc) mode, press STOP button on the player, and FUNCTIONS button on the remote control unit. Cancelled automatically 5 seconds later. Press "FL Display" on remote control unit for next page (FL Display) on values of dvd drive current.
ADSC internal RAM data check	ADSC internal RAM data check ·ADSC internal RAM data is read out and displayed.	 The value is shown in hexadecimal notation. The above example shows the data in ADSC address OFAh is 6901h.	In STOP (no disc) mode, press STOP button on the player, and "1" button on the remote control unit. Press STOP or PLAY button.
CD laser drive current measurement	CD laser drive current measurement CD laser drive current is measured and the result is displayed together with the initial value stored in the EEPROM IC. After the measurement, CD laser emission is kept on. It is turned off when POWER key is switched off. (It is also turned off when POWER button on the player is switched off.)	 The value denotes the current in decimal notation. The above example shows the initial current is 28mA and the measured value is 26mA.	In STOP (no disc) mode, press STOP button on the player, and "3" button on the remote control unit. Cancelled automatically 5 seconds later. Press "FL Display" on remote control unit for next page. (FL Display)

Item		FL Display	Key Operation
Mode Name	Description		Front Key
Timer 1 check	Timer 1 check Laser operation timer Operation time is measured separately for DVD laser and CD laser. Press "FL Display" button for next page of FL Display	 Shown to the left is DVD laser time, and to the right CD laser time. Time is shown in 4 digits of decimal notation in a unit of 10 hours. "0000" will follow "9999".	In STOP (no disc) mode, press STOP button on the player, and "▲" button on the remote control unit. Cancelled automatically 5 seconds later.
Timer 1 reset	Timer 1 reset Laser operation timer Operation time of both DVD laser and CD laser is reset all at once.	T1_0000/0000 (display1/display2)	While displaying Timer 1 data, press STOP button on the player, and "▼" button on the remote control unit. Cancelled automatically 5 seconds later.
Timer 2 check	Timer 2 check Spindle motor operation timer Press "FL Display" button for next page of FL Display	 Time is shown in 5 digits of decimal notation in a unit of 10 hours. "00000" will follow "99999".	In STOP (no disc) mode, press STOP button on the player, and "▶" button on the remote control unit. Cancelled automatically 5 seconds later.
Timer 2 reset	Timer 2 reset Spindle motor operation timer Press "FL Display" button for next page of FL Display	T2_00000	While displaying Timer 2 data, press STOP button on the player, and "◀" button on the remote control unit. Cancelled automatically 5 seconds later.

■ Discs that can be played

DVD VIDEO DVD VIDEO	**DVD-Video** DVD-V —
DVD AUDIO	**DVD-Audio** DVD-A DVD-V ● DVD-V Some DVD-Audio discs contain DVD-Video content.
COMPACT disc DIGITAL VIDEO COMPACT disc SUPER VIDEO	**Video CD** VCD ● Including SVCD (Conforming to IEC62107).
DVD RAM RAM4.7	**DVD-RAM** DVD-VR MP3 JPEG MPEG4 DivX ※1 ● DVD-VR Recorded with devices using Version 1.1 of the Video Recording Format (a unified video recording standard), such as DVD video recorders, DVD video cameras, personal computers, etc. ● JPEG Recorded with Panasonic SD multi cameras or DVD video recorders using the DCF (Design rule for Camera File System) Standard Version 1.0. ● MPEG4 Recorded with Panasonic SD multi cameras or DVD video recorders [conforming to SD VIDEO specifications (ASF standard)/MPEG4 (Simple Profile) video system/G.726 audio system].
DVD R R4.7 DVD RW DVD R R DL	**DVD-R (DVD-Video)**※2**/DVD-RW (DVD-Video)** DVD-V ● Discs recorded and finalized※3 on DVD video recorders or DVD video cameras. **DVD-R (VR)**※2**/DVD-RW (VR)** DVD-VR ● Discs recorded and finalized※3 on DVD video recorders or DVD video cameras using Version 1.1 (or 1.2 DVD-R DL only) of the Video Recording Format (a unified video recording standard). **DVD-R/DVD-RW** MP3 JPEG MPEG4 DivX ※1 ● Finalize※3 the disc after recording.
—	**+R (Video)**※2**/+RW (Video)** DVD-V ● Discs recorded and finalized※3 on DVD video recorders or DVD video cameras.
COMPACT disc DIGITAL AUDIO COMPACT disc DIGITAL AUDIO TEXT	**CD** CD WMA MP3 JPEG VCD MPEG4 DivX ※1 ● This unit can play CD-R/RW recorded with the above formats. Close the sessions or finalize※3 the disc after recording. ● CD This unit is compatible with HDCD, but does not support the Peak Extend function (a function which expands the dynamic range of high-level signals). HDCD-encoded CDs sound better because they are encoded with 20 bits, as compared with 16 bits for all other CDs. ● WMA MP3 JPEG This unit also plays HighMAT discs. ● WMA This unit does not support Multiple Bit Rate (MBR: an encoding process for audio content that produces an audio file encoded at several different bit rates).

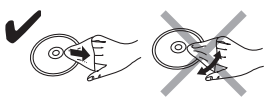
※1 Functions added with DivX Ultra are not supported.
※2 Includes single-sided, dual-layer discs.
※3 A process that allows play on compatible equipment.
● It may not be possible to play all the above-mentioned discs in some cases due to the type of disc or condition of the recording.

■ Discs that cannot be played

DVD-RW version 1.0, DVD-ROM, CD-ROM, CDV, CD-G, SACD, DivX Video Discs and Photo CD, DVD-RAM that cannot be removed from their cartridge, 2.6-GB and 5.2-GB DVD-RAM, and "Chaoji VCD" available on the market including CVD, DVCD and SVCD that do not conform to IEC62107.

■ To clean discs

Wipe with a damp cloth and then wipe dry.



■ Disc handling precautions

- Do not attach labels or stickers to discs. This may cause disc warping, rendering it unusable.
- Do not write on the label side with a ball-point pen or other writing instrument.
- Do not use record cleaning sprays, benzine, thinner, liquids which prevent static electricity, or any other solvent.
- Do not use scratch-proof protectors or covers.
- Do not use the following discs:
  - – Discs with exposed adhesive from removed stickers or labels (rented discs, etc).
  - – Discs that are badly warped or cracked.
  - – Irregularly shaped discs, such as heart shapes.

■ Video systems

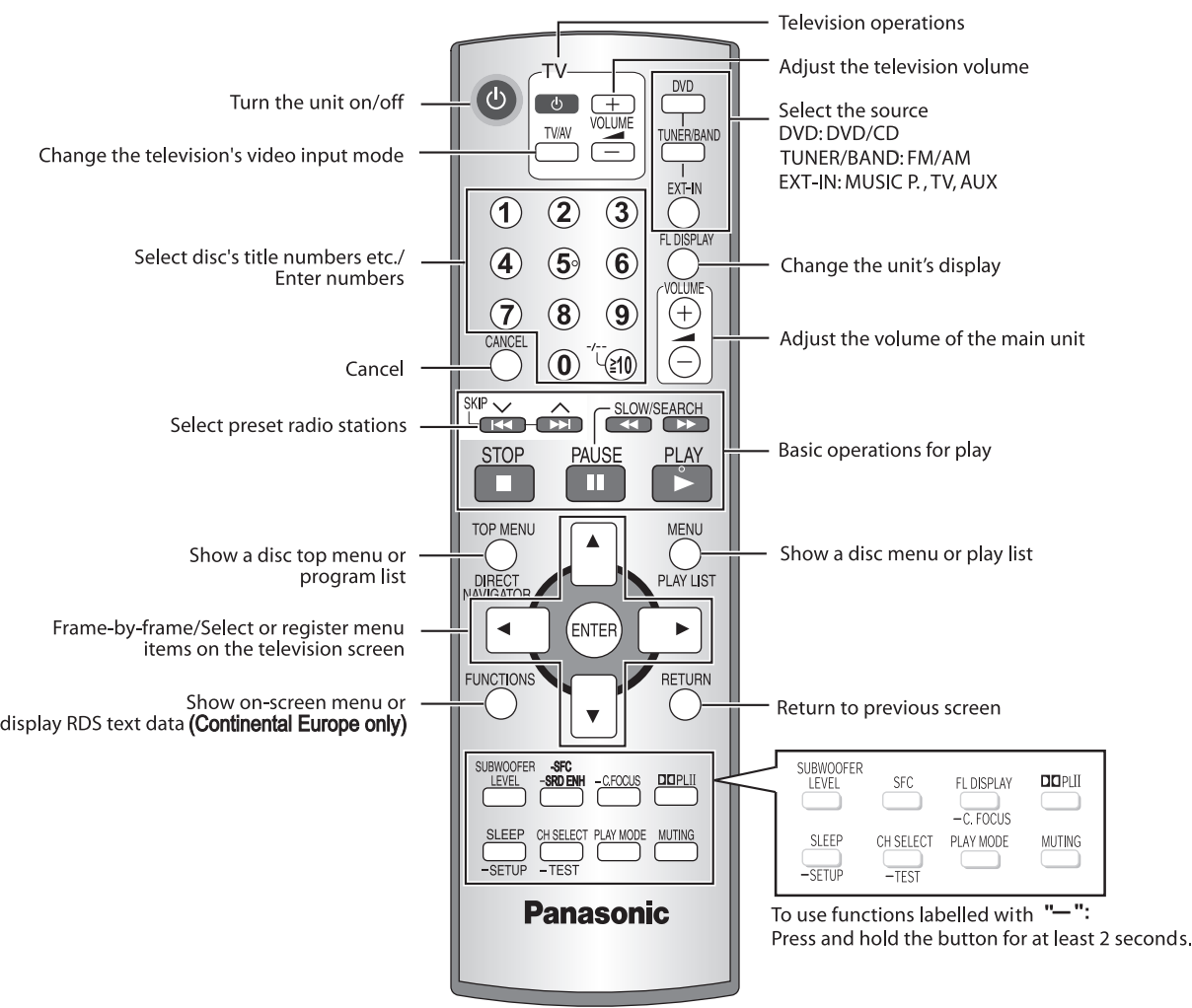
- This unit can play PAL and NTSC, but your television must match the system used on the disc.
- PAL discs cannot be correctly viewed on an NTSC television.
- This unit can convert NTSC signals to PAL 60 for viewing on a PAL television.

■ Clean this unit with a soft, dry cloth.

- Never use alcohol, paint thinner or benzine to clean this unit.
- Before using chemically treated cloth, carefully read the instructions that came with the cloth.

Do not use commercially available lens cleaners as they may cause malfunction. Cleaning of the lens is generally not neccessary although this depends on the operating environment.

Before moving the unit, ensure the disc trays are empty.
Failure to do so will risk severely damaging the disc and the unit.


Television operations
Adjust the television volume
Turn the unit on/off
Change the television's video input mode
Select the source
DVD: DVD/CD
TUNER/BAND: FM/AM
EXT-IN: MUSIC P., TV, AUX
Select disc's title numbers etc./
Enter numbers
Change the unit's display
Adjust the volume of the main unit
Cancel
Select preset radio stations
Basic operations for play
Show a disc top menu or
program list
Show a disc menu or play list
Frame-by-frame/Select or register menu
items on the television screen
Show on-screen menu or
display RDS text data (Continental Europe only)
Return to previous screen
TV
TV/AV
VOLUME
DVD
TUNER/BAND
EXT-IN
FL DISPLAY
CANCEL
SKIP
SLOW/SEARCH
STOP
PAUSE
PLAY
TOP MENU
MENU
DIRECT NAVIGATOR
PLAY LIST
ENTER
FUNCTIONS
RETURN
SUBWOOFER LEVEL
SFC
SRD ENH
C.FOCUS
PLII
SLEEP
CH SELECT
PLAY MODE
MUTING
SETUP
TEST
Panasonic
To use functions labelled with "—":
Press and hold the button for at least 2 seconds.

Standby/on switch [⏻/I]
Press to switch the unit from on to standby mode or vice verse. In standby mode, the unit is still consuming a small amount of power.

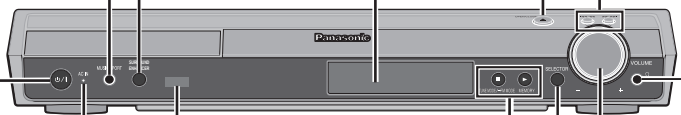
MUSIC PORT
Connect an external device

SURROUND ENHANCER
Enhancing the surround sound effect

⏏ OPEN/CLOSE
Open/Close the disc tray

⏮/◀◀, ▶▶/▶▶⏭/ ∨TUNING ∧
Skip or slow-search play
Select the radio stations

Display



Phones
Connect headphones

Remote control signal sensor

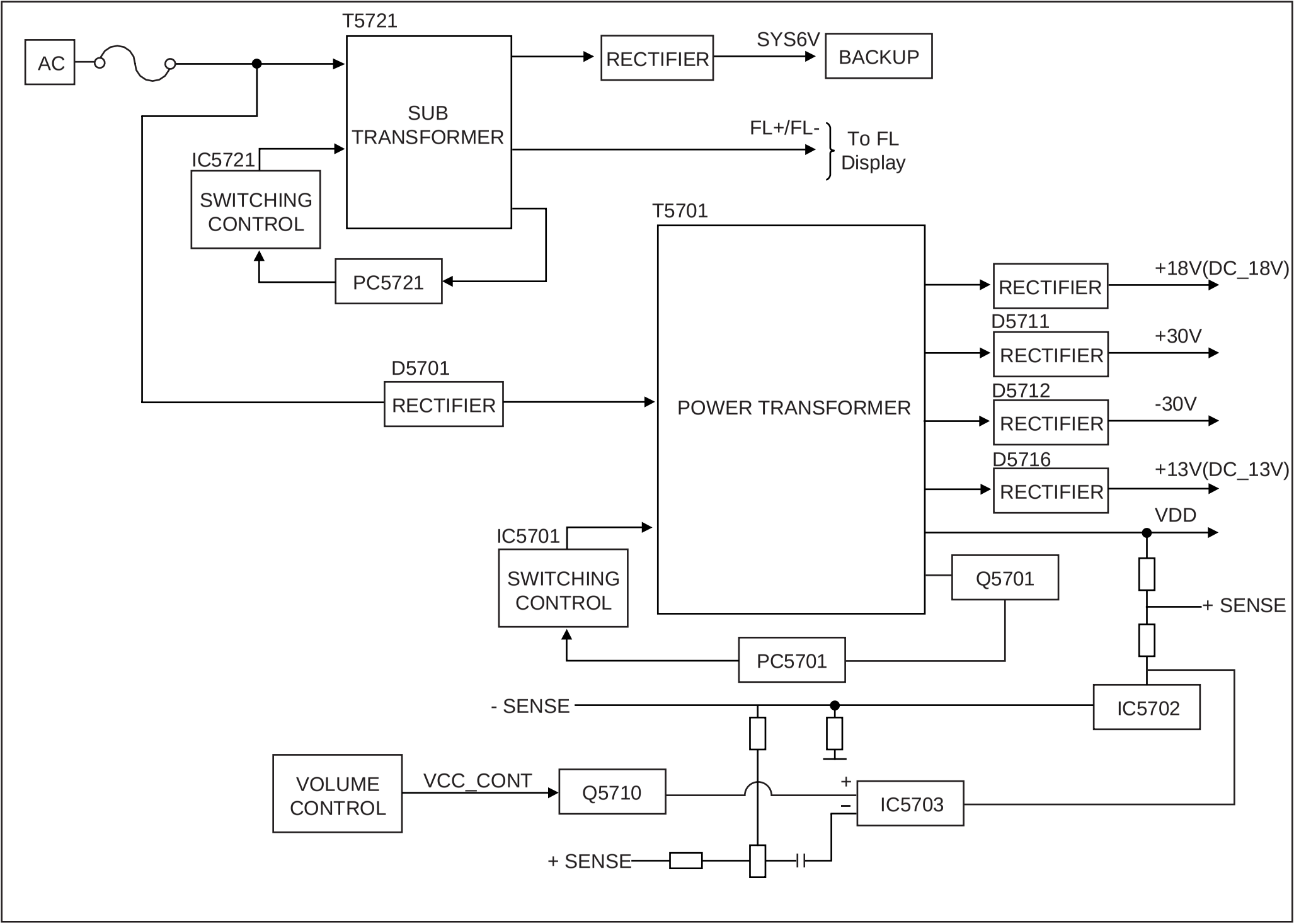
VOLUME
Turn up/down the volume

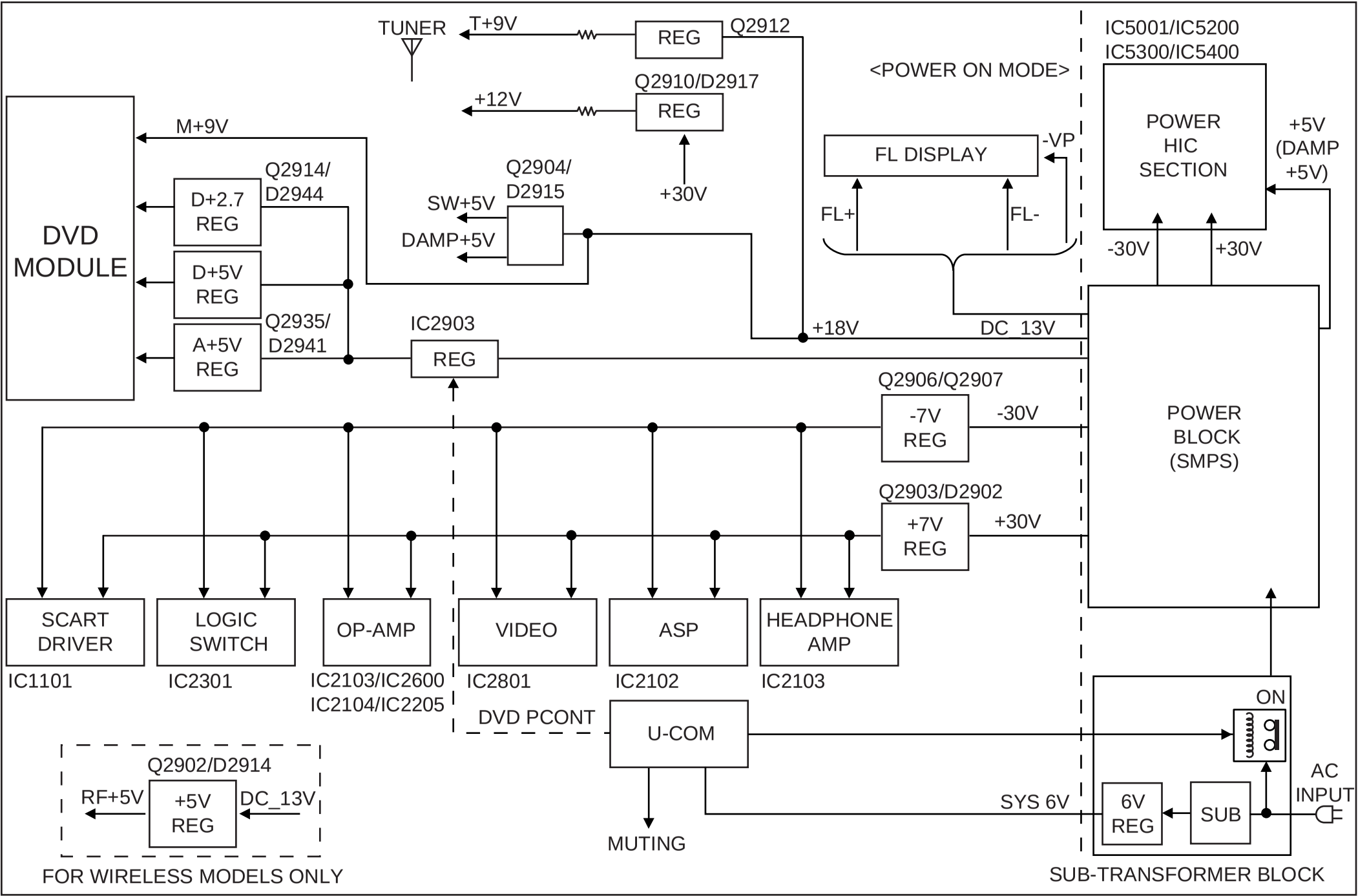
AC supply indicator
[AC IN]
This indicator lights when the unit is connected to the AC mains supply.

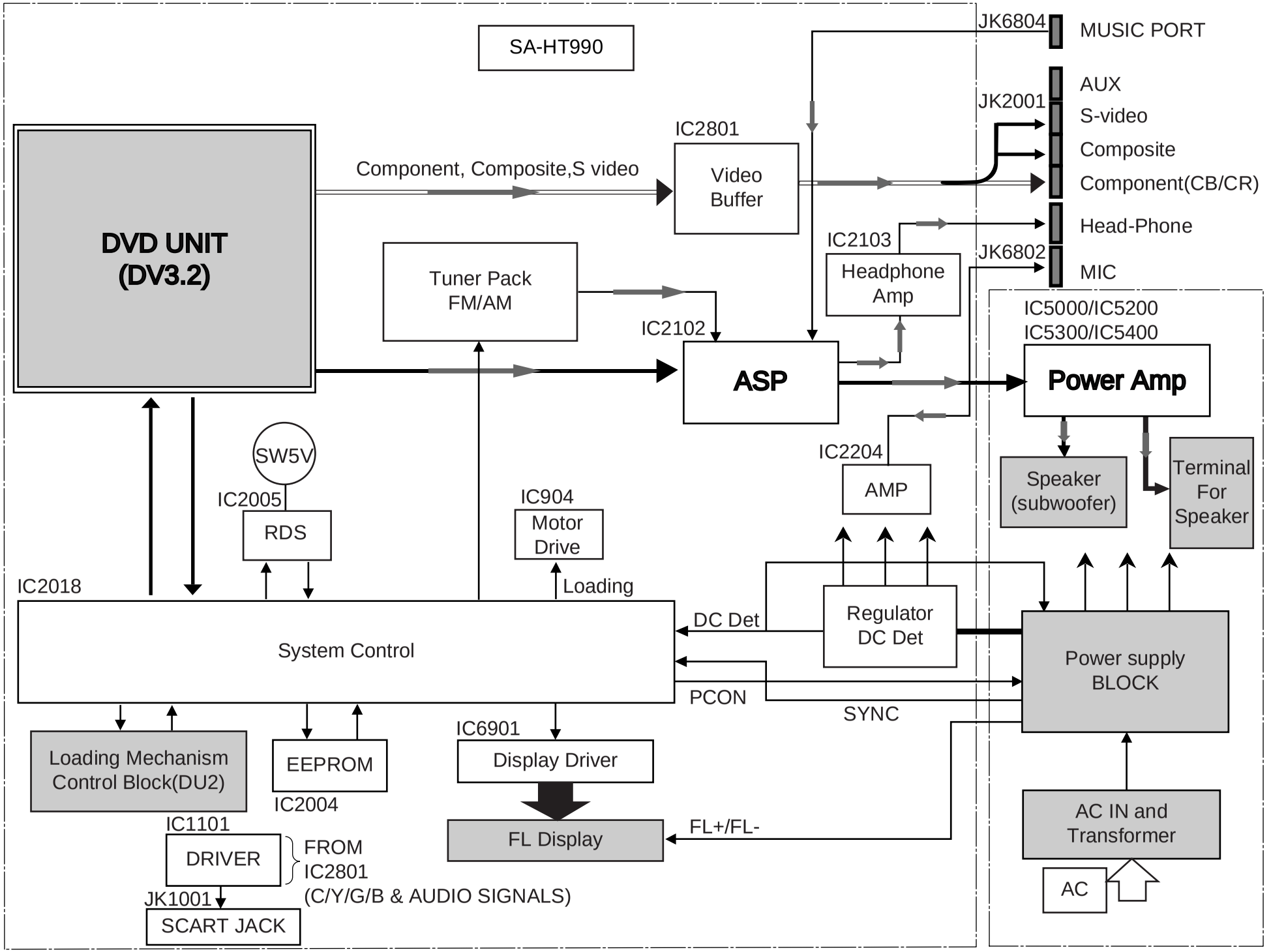
■ /-TUNE MODE/-FM MODE
Stop playing/
Select the tuning mode
Adjust the FM reception condition
▶/MEMORY
Play discs/
Memorize the receiving radio stations

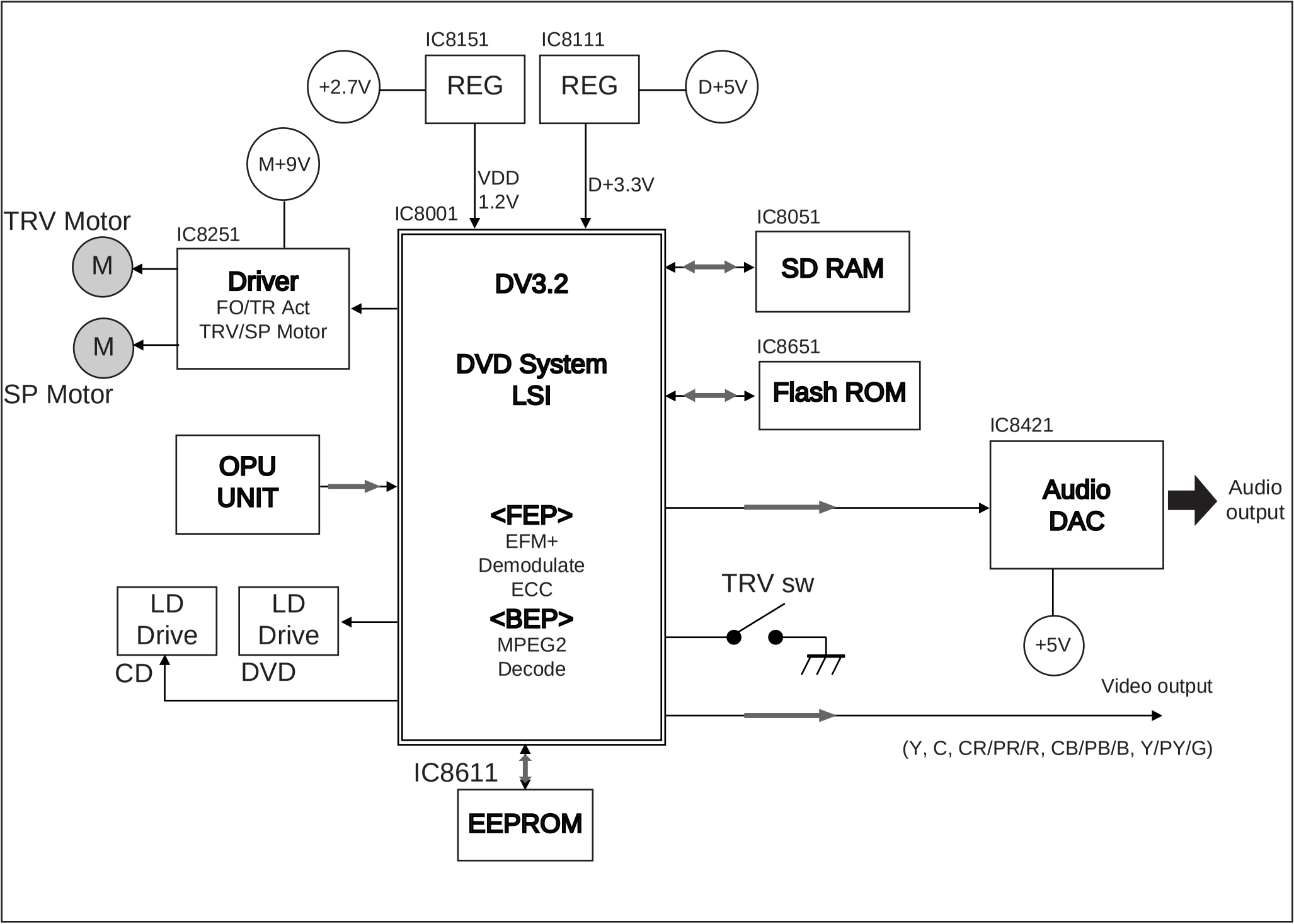
SELECTOR
DVD/CD→FM→AM→TV*→AUX→
→MUSIC P.→Return to DVD/CD

* "TV" works only when the scart cable is connected.

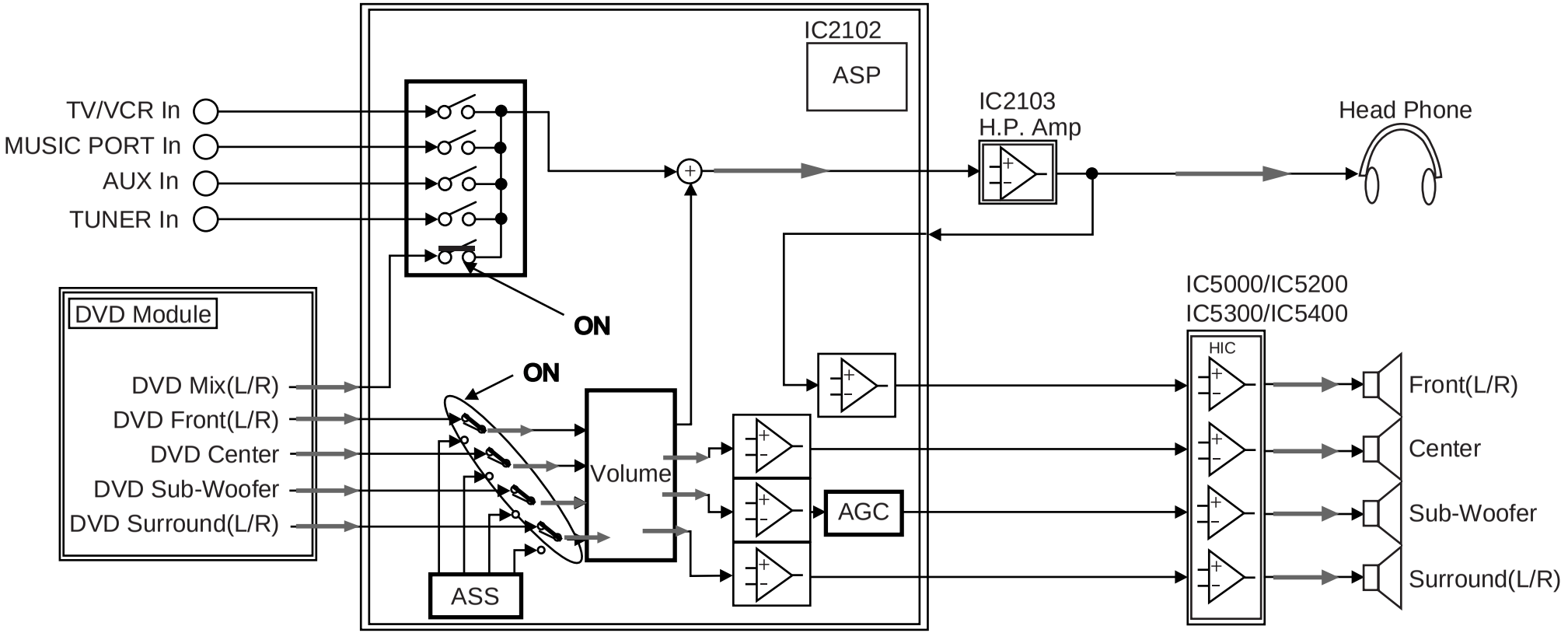

AC
T5721
SUB
TRANSFORMER
RECTIFIER
SYS6V
BACKUP
FL+/FL-
To FL
Display
IC5721
SWITCHING
CONTROL
PC5721
T5701
POWER TRANSFORMER
D5701
RECTIFIER
RECTIFIER
+18V(DC_18V)
D5711
RECTIFIER
+30V
D5712
RECTIFIER
-30V
D5716
RECTIFIER
+13V(DC_13V)
VDD
IC5701
SWITCHING
CONTROL
Q5701
+ SENSE
PC5701
- SENSE
IC5702
VOLUME
CONTROL
VCC_CONT
Q5710
+
–
IC5703
+ SENSE


TUNER
T+9V
REG
Q2912
Q2910/D2917
+12V
REG
+30V
<POWER ON MODE>
IC5001/IC5200
IC5300/IC5400
POWER
HIC
SECTION
+5V
(DAMP
+5V)
FL DISPLAY
-VP
FL+
FL-
-30V
+30V
DVD
MODULE
M+9V
Q2914/
D2944
D+2.7
REG
D+5V
REG
A+5V
REG
Q2935/
D2941
Q2904/
D2915
SW+5V
DAMP+5V
IC2903
REG
+18V
DC_13V
Q2906/Q2907
-7V
REG
-30V
POWER
BLOCK
(SMPS)
Q2903/D2902
+7V
REG
+30V
SCART
DRIVER
IC1101
LOGIC
SWITCH
IC2301
OP-AMP
IC2103/IC2600
IC2104/IC2205
VIDEO
IC2801
ASP
IC2102
HEADPHONE
AMP
IC2103
DVD PCONT
U-COM
MUTING
ON
AC
INPUT
SYS 6V
6V
REG
SUB
SUB-TRANSFORMER BLOCK
Q2902/D2914
RF+5V
+5V
REG
DC_13V
FOR WIRELESS MODELS ONLY

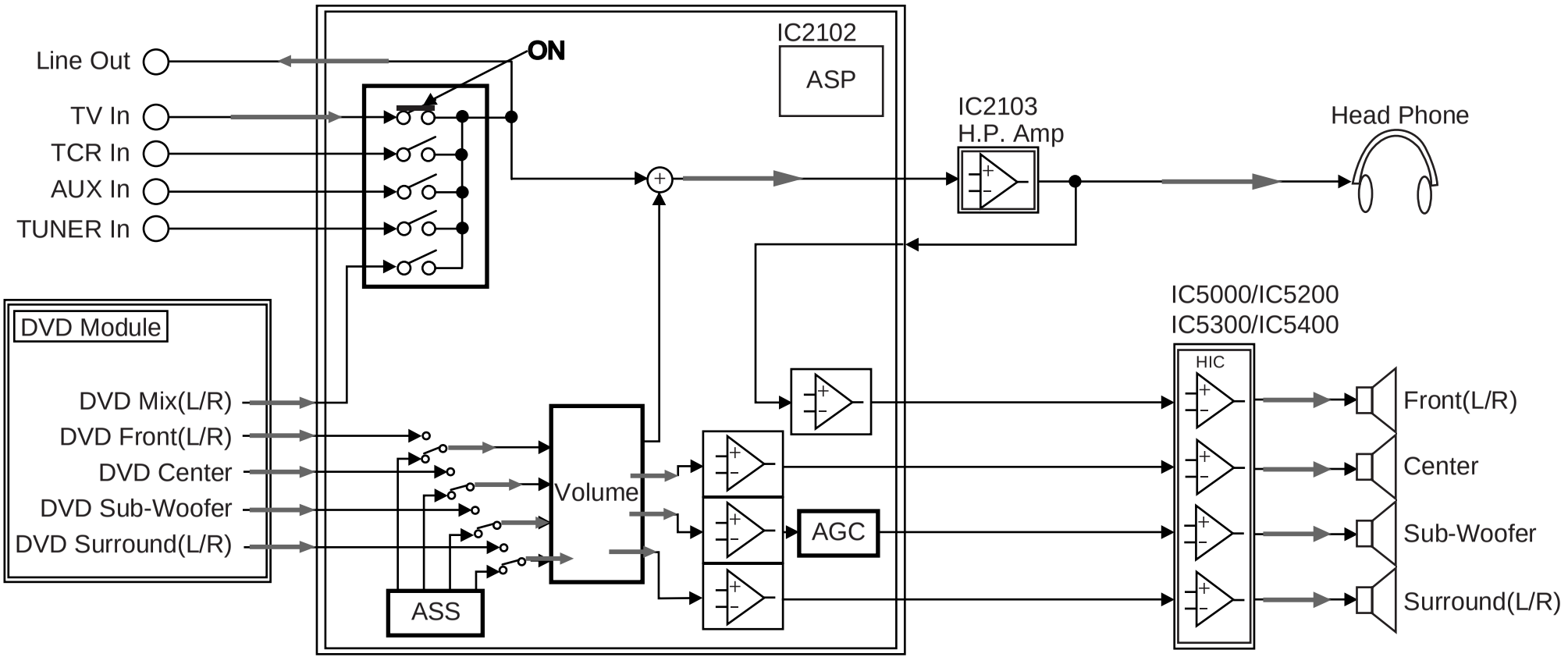

SA-HT990
DVD UNIT
(DV3.2)
Component, Composite,S video
IC2801
Video
Buffer
JK6804
MUSIC PORT
JK2001
AUX
S-video
Composite
Component(CB/CR)
Head-Phone
JK6802
MIC
IC2103
Headphone
Amp
Tuner Pack
FM/AM
IC2102
ASP
IC5000/IC5200
IC5300/IC5400
Power Amp
SW5V
IC2005
RDS
IC904
Motor
Drive
Loading
IC2204
AMP
Speaker
(subwoofer)
Terminal
For
Speaker
IC2018
System Control
DC Det
Regulator
DC Det
Power supply
BLOCK
PCON
SYNC
Loading Mechanism
Control Block(DU2)
EEPROM
IC2004
IC6901
Display Driver
FL Display
FL+/FL-
AC IN and
Transformer
AC
IC1101
DRIVER
FROM
IC2801
(C/Y/G/B & AUDIO SIGNALS)
JK1001
SCART JACK

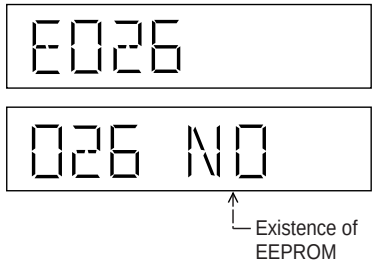
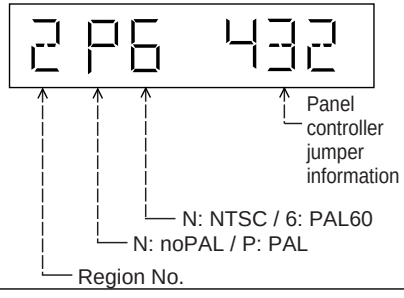
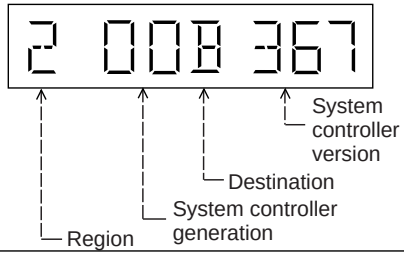
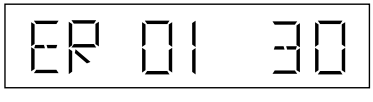

IC8151
IC8111
+2.7V
REG
REG
D+5V
M+9V
VDD
1.2V
D+3.3V
IC8001
TRV Motor
IC8251
M
Driver
FO/TR Act
TRV/SP Motor
M
SP Motor
DV3.2
DVD System
LSI
IC8051
SD RAM
IC8651
Flash ROM
OPU
UNIT
<FEP>
EFM+
Demodulate
ECC
<BEP>
MPEG2
Decode
IC8421
Audio
DAC
Audio
output
TRV sw
+5V
LD
Drive
LD
Drive
CD
DVD
Video output
(Y, C, CR/PR/R, CB/PB/B, Y/PY/G)
IC8611
EEPROM

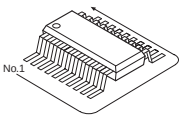
DVD 5.1ch Play Back Mode



2ch Analog input Mode

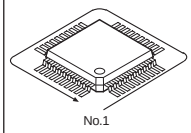


Item		FL Display	Key Operation
Mode Name	Description		Front Key
Micro-processor firmware version display & EEPROM checksum display.	Micro-processor firmware version display & EEPROM checksum display. EEPROM checksum is only available due to existence of EEPROM IC. (NO: NO EEPROM IC)		In STOP (no disc) mode, press STOP button on the player, and "7" button on the remote control unit. Cancelled automatically 5 seconds later. Press "FL Display" button on remote control unit for next page. (FL Display)
Initialization	Initialization User settings are cancelled and player is initialized to factory setting.		In STOP (no disc) mode, press STOP button on the player , and ≧10 button on the remote control unit.
Region display	Region display & mode		In STOP (no disc) mode, press STOP button on the player, and "6" button on the remote control unit. Cancelled automatically 5 seconds later.
DVD module firmware version display	DVD module firmware version is displayed on the FL Display.		In STOP (no disc) mode, press STOP button on the player, and "8" button on the remote control unit. Cancelled automatically 5 seconds later.
Communication error display	Displays frequency of communication errors between system control IC and mechanism control IC during DVD module.		In STOP (no disc) mode, press STOP button on the player, and "MENU" button on the remote control unit. Cancelled automatically 5 seconds later.
DVD Module Reset	To reset DVD Module.		While in initialization mode, press & hold STOP button on player, follow by "ENTER" button on the remote control unit. Cancelled automatically 5 seconds later.



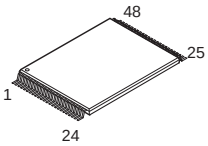
C0ABBB000230 (8p)
C0CBCBD00018 (8p)
C0EBA0000029 (4p)
C0FBBK000050 (28p)
C0JBAB000011 (14p)
C0JBAR000326 (16p)

C0ABCB000052 (14p)
C1BB00001008 (16p)
C3EBEG000073 (8p)
C3ABPG000145 (54p)
C9ZB00000461 (132p)

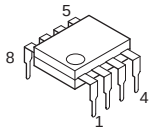


C0HBB0000057 (44p)
C1BB00001098 (100p)
C2CBYY000195 (100p)
MN2DS0009AP (256p)
MN864701 (164p)

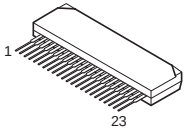
RFKWMHA0B160



C0DABYY00002
C0AABB000125



C0GAY0000013
C1BA00000407



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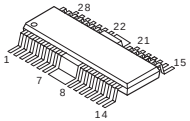

C0EBE0000455
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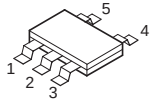
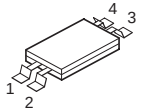
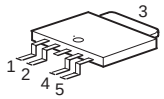


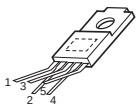
B3PBA0000237



C0DBEHG00006



C0DAAMH00012
C5HABZZ00125



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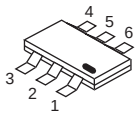
XP0621400L



2SB0709AHL
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2SD0601AHL
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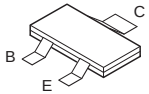

B1ADGB000008
B1ADCE000012
B1GBCFLL0037
B1GBCFJN0033
B1GDCFGA0018
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UNR221200L
UNR511V00L
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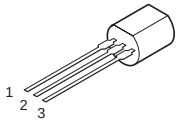

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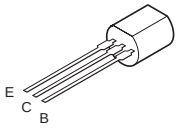
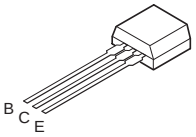
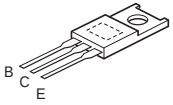


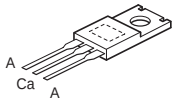
B1BACD000018



B1BACG000023
B1BACG000048
B1BCCG000002

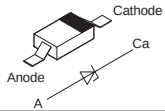


B0HBSM000043



B0BC01200019
B0BC01300001
B0BC01700015
B0BC02900004
B0BC035A0007
B0BC4R0A0006
B0BC4R3A0006
B0BC4R600016
B0BC3R700004

B0BC5R000009
B0BC6R700006
B0BC7R500001
B0JCPD000025



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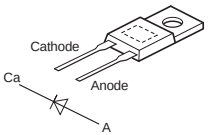
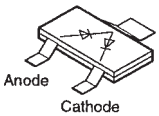
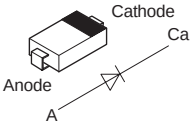


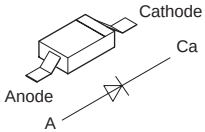
B0ADCJ000020



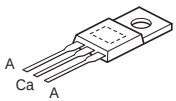
B0ACCK000005



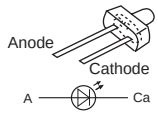
MA2J11100L



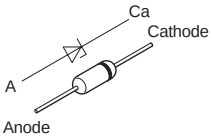
B0ZAZ0000052



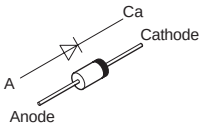
B3AAA0000803



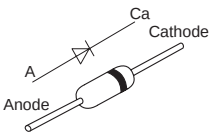
B0BC5R600003



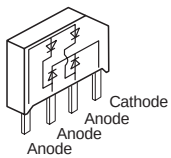
B0EAKM000117
B0EAMM000057
B0JAME000029



MA2J72800L



B0FBAR000018



Tips for making WMA/MP3 and JPEG discs (For CD-R, CD-RW)

- Discs must conform to ISO9660 level 1 or 2 (except for extended formats).
- This unit supports multi-session but if there are a lot of sessions it takes more time for play to start. Keep the number of sessions to a minimum to avoid this.
- When there are more than 8 groups, the eighth group onwards will be displayed on one vertical line in the menu screen.
- There may be differences in the display order on the menu screen and computer screen.
- This unit cannot play files recorded using packet write.

Naming folders and files (Files are treated as content and folders are treated as groups on this unit.)

At the time of recording, prefix folder and file names with 3-digit numbers in the order you want to play them (this may not work at times).

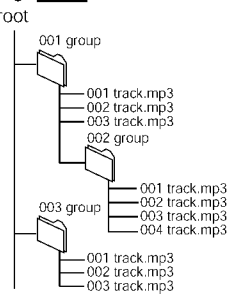
Files must have the extension:

".WMA" or ".wma"

".MP3" or ".mp3"

".JPG", ".jpg", ".JPEG" or ".jpeg"

e.g. MP3



WMA

- You cannot play WMA files that are copy protected.
- This unit does not support Multiple Bit Rate (MBR).

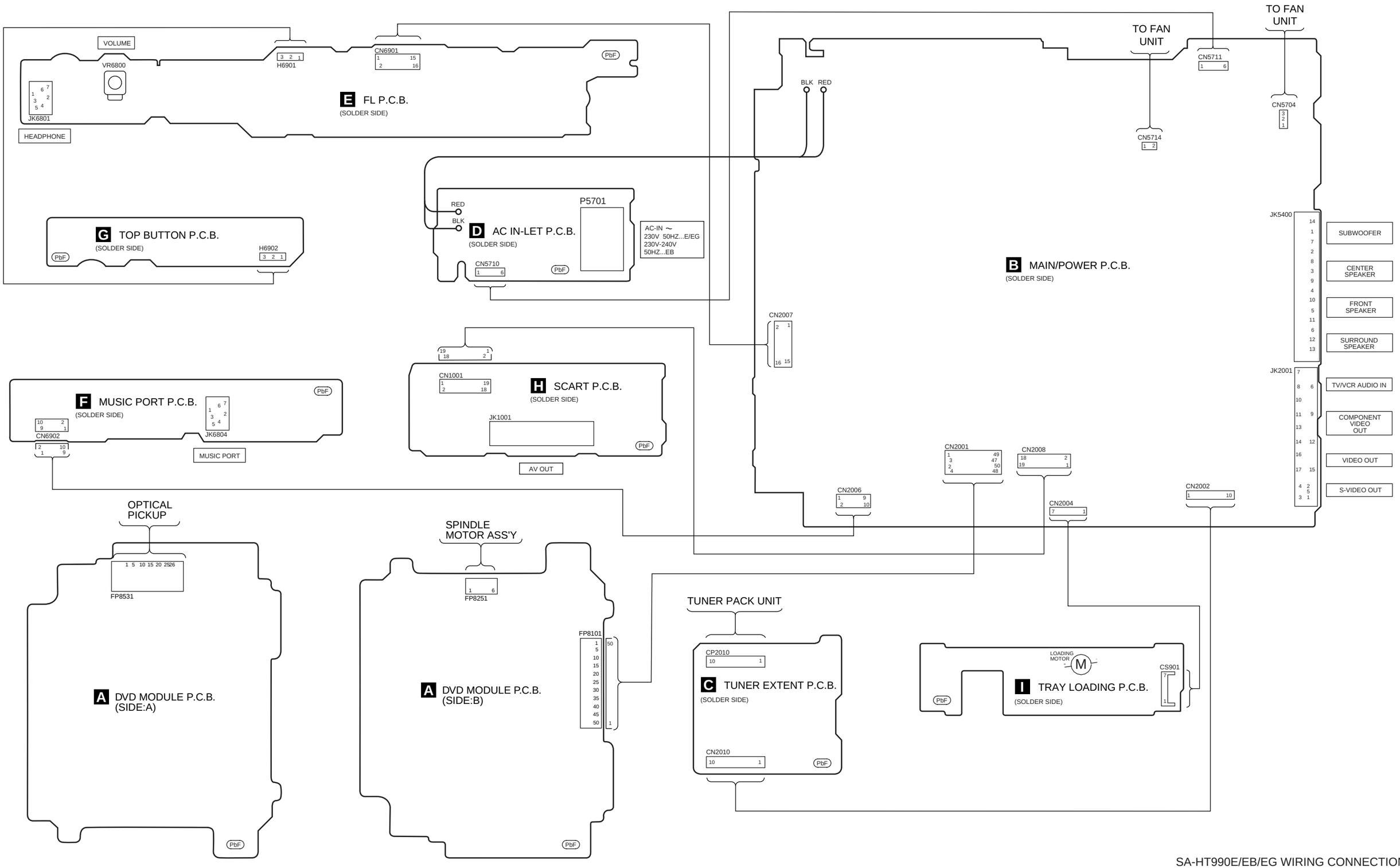
MP3

This unit does not support ID3 tags.

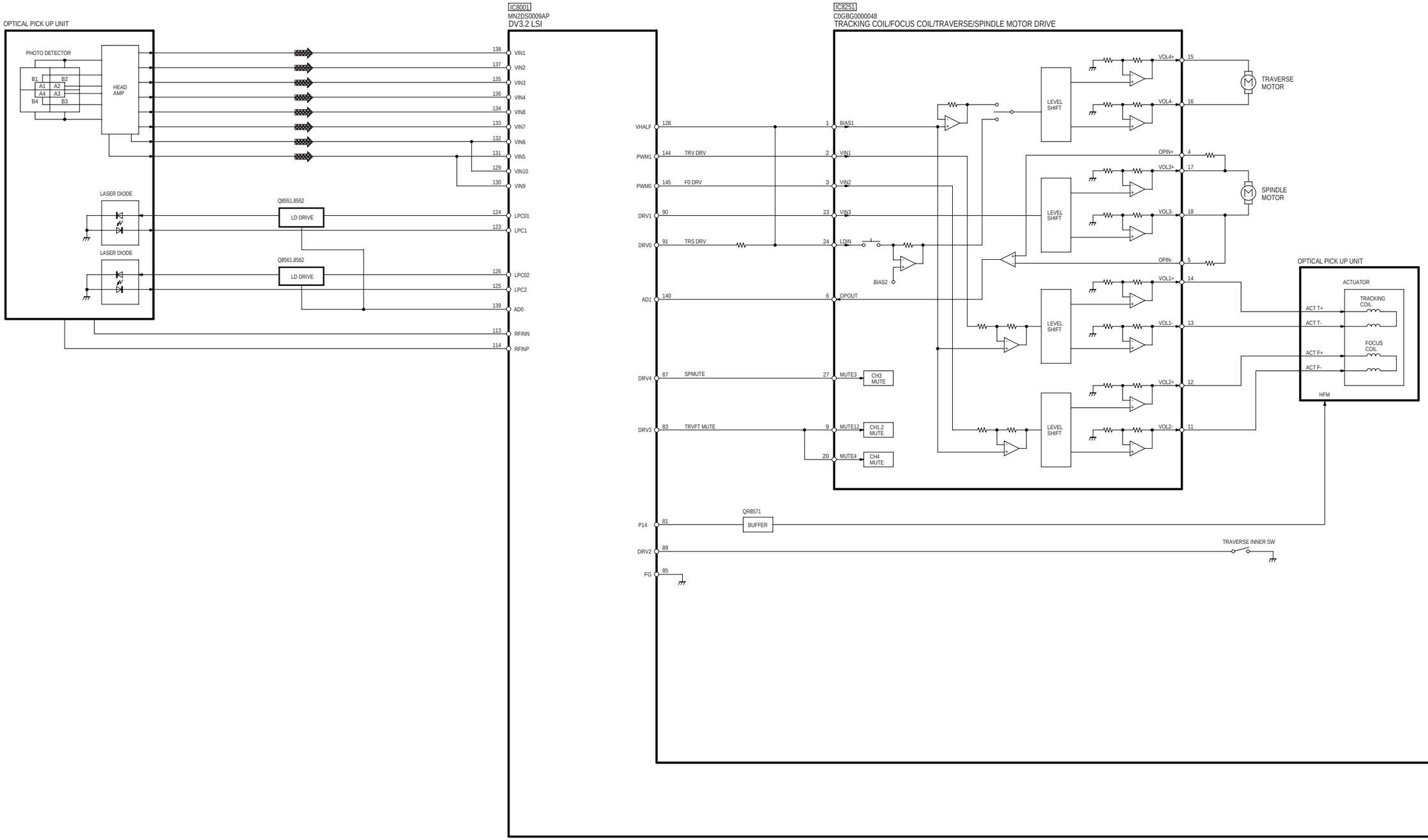
Compatible sampling rates: 8, 11.02, 12, 16, 22.05, 24, 32, 44.1 and 48 kHz.

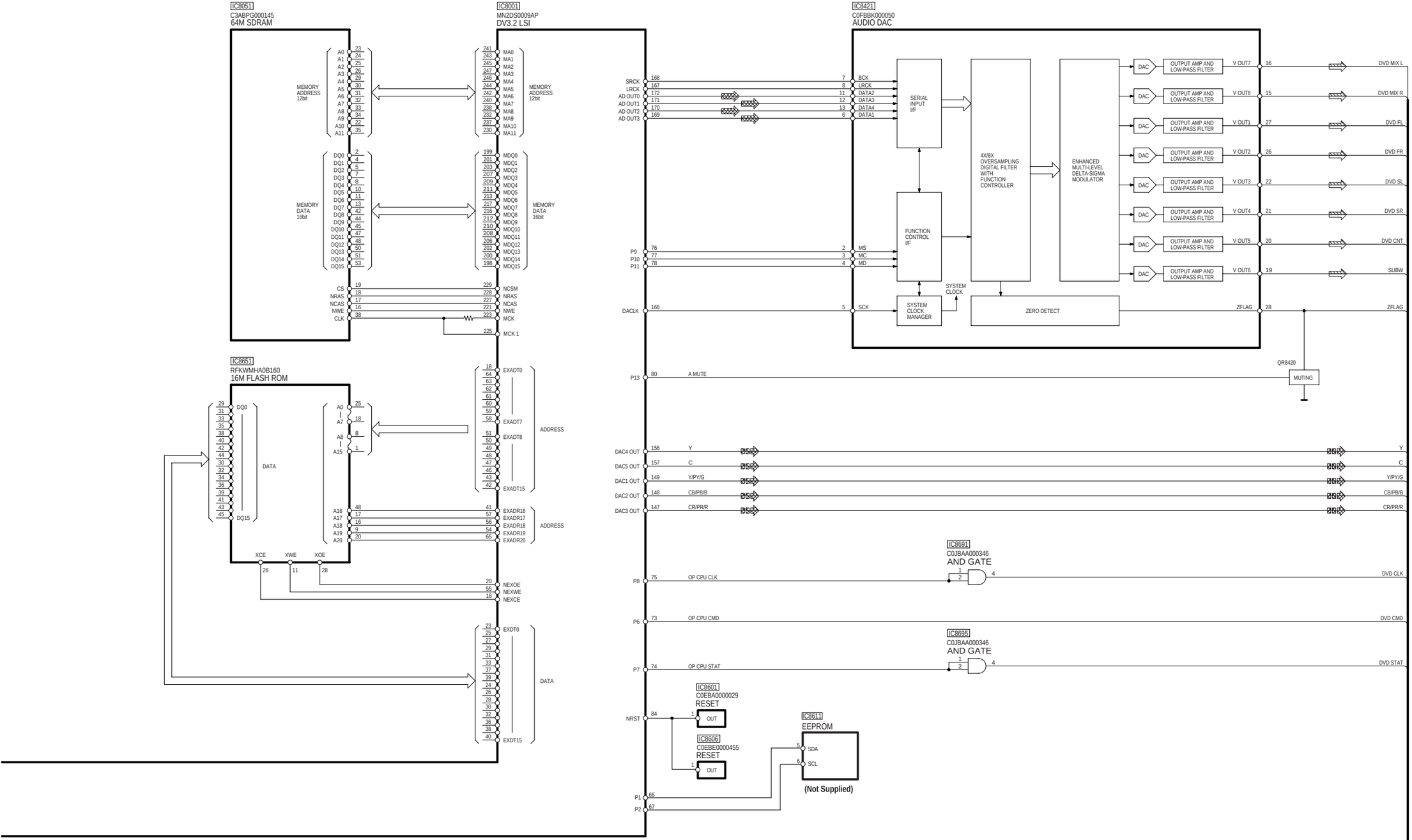
JPEG

- To view JPEG files on this unit:
  - Take them on a digital camera that meets the DCF Standard (Design rule for Camera File system) Version 1.0. Some digital cameras have functions that are not supported by the DCF Standard Version 1.0 like automatic picture rotation which may render a picture un-viewable.
  - Do not alter the files in any way or save them under a different name.
- This unit cannot display moving pictures, MOTION JPEG and other such formats, still pictures other than JPEG (e.g. TIFF) or play pictures with attached audio.



SA-HT990E/EB/EG WIRING CONNECTION


OPTICAL PICK UP UNIT
PHOTO DETECTOR
B1
B2
A1
A2
A4
A3
B4
B3
HEAD AMP
LASER DIODE
LASER DIODE
Q8551,8552
LD DRIVE
Q8561,8562
LD DRIVE
IC8001
MN2DS0009AP
DV3.2 LSI
138 VIN1
137 VIN2
135 VIN3
136 VIN4
134 VIN8
133 VIN7
132 VIN6
131 VIN5
129 VIN10
130 VIN9
124 LPC01
123 LPC1
126 LPC02
125 LPC2
139 AD0
113 RFINN
114 RFINP
VHALF 128
PWM1 144 TRV DRV
PWM0 145 F0 DRV
DRV1 90
DRV0 91 TRS DRV
AD1 140
DRV4 87 SPMUTE
DRV3 83 TRVFT MUTE
P14 81
DRV2 89
FG 85
IC8251
C0GBG0000048
TRACKING COIL/FOCUS COIL/TRAVERSE/SPINDLE MOTOR DRIVE
1 BIAS1
2 VIN1
3 VIN2
23 VIN3
24 LDIN
BIAS2
6 OPOUT
27 MUTE3
CH3 MUTE
9 MUTE12
CH1,2 MUTE
20 MUTE4
CH4 MUTE
LEVEL SHIFT
LEVEL SHIFT
LEVEL SHIFT
LEVEL SHIFT
VOL4+ 15
VOL4- 16
OPIN+ 4
VOL3+ 17
VOL3- 18
OPIN- 5
VOL1+ 14
VOL1- 13
VOL2+ 12
VOL2- 11
TRAVERSE MOTOR
SPINDLE MOTOR
OPTICAL PICK UP UNIT
ACTUATOR
TRACKING COIL
FOCUS COIL
ACT T+
ACT T-
ACT F+
ACT F-
HFM
QR8571
BUFFER
TRAVERSE INNER SW


IC8051
C3ABPG000145
64M SDRAM
MEMORY ADDRESS 12bit
MEMORY DATA 16bit
A0 A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11
DQ0 DQ1 DQ2 DQ3 DQ4 DQ5 DQ6 DQ7 DQ8 DQ9 DQ10 DQ11 DQ12 DQ13 DQ14 DQ15
CS NRAS NCAS NWE CLK
IC8001
MN2DS0009AP
DV3.2 LSI
MA0 MA1 MA2 MA3 MA4 MA5 MA6 MA7 MA8 MA9 MA10 MA11
MDQ0 MDQ1 MDQ2 MDQ3 MDQ4 MDQ5 MDQ6 MDQ7 MDQ8 MDQ9 MDQ10 MDQ11 MDQ12 MDQ13 MDQ14 MDQ15
NCSM NRAS NCAS NWE MCK
MCK 1
IC8651
RFKWMHA0B160
16M FLASH ROM
DQ0 DQ15
DATA
EXADT0 EXADT7 EXADT8 EXADT15
ADDRESS
EXADR16 EXADR17 EXADR18 EXADR19 EXADR20
XCE XWE XOE
NEXOE NEXWE NEXCE
EXDT0 EXDT15
DATA
IC8421
C0FBBK000050
AUDIO DAC
SRCK LRCK AD OUT0 AD OUT1 AD OUT2 AD OUT3
BCK LRCK DATA2 DATA3 DATA4 DATA1
SERIAL INPUT I/F
FUNCTION CONTROL I/F
SYSTEM CLOCK MANAGER
SYSTEM CLOCK
4X/8X OVERSAMPLING DIGITAL FILTER WITH FUNCTION CONTROLLER
ENHANCED MULTI-LEVEL DELTA-SIGMA MODULATOR
ZERO DETECT
DAC
OUTPUT AMP AND LOW-PASS FILTER
V OUT7 V OUT8 V OUT1 V OUT2 V OUT3 V OUT4 V OUT5 V OUT6
DVD MIX L DVD MIX R DVD FL DVD FR DVD SL DVD SR DVD CNT SUBW
P9 P10 P11
MS MC MD
DACLK
SCK
ZFLAG
QR8420
MUTING
P13
A MUTE
DAC4 OUT DAC5 OUT DAC1 OUT DAC2 OUT DAC3 OUT
Y C Y/PY/G CB/PB/B CR/PR/R
IC8691
C0JBAA000346
AND GATE
P8
OP CPU CLK
DVD CLK
P6
OP CPU CMD
DVD CMD
IC8695
C0JBAA000346
AND GATE
P7
OP CPU STAT
DVD STAT
IC8601
C0EBA0000029
RESET
NRST
OUT
IC8606
C0EBE0000455
RESET
OUT
IC8611
EEPROM
SDA
SCL
(Not Supplied)
P1
P2

TUNER PACK

FM ANT

AM ANT

MIXER

RF AMP

OSC

BUFFER

FM IF AMP

AM ANT COIL

AM OSC COIL

+B

+B (FM)

AMP

Rch

TUN L

FM/AM IF AMP, DET/AM OSC MIX /FM MPX (LA1833NMNTLM)

DET OUT

ALC

AM OSC

BUFFER

AM MIX

AM RM AMP

AGC

LEVEL DET

S-CURVE

FM IF

AM/FM IF BUFFER

AM IF

AM DET

FM DET

COMP

TUNING DRIVE

DECODER

PHASE DET

PILOT CANCEL

STEREO SWITCH

VCO

FF

FF

FF

PILOT DET

REG

REG

SD

ST

SD

ST/DO

AM IFT

PLL FREQUENCY SYNTHESIZER (LC7219MDTRM)

PHASE DETECTOR CHARGE PUMP

REFERENCE DIVIDER

X103

UNLOCK DETECTOR

SWALLOW COUNTER 1/6,1/17,4 BITS

1/2

12 BITS PROGRAMMABLE DIVIDER

UNIVERSAL COUNTER

POWER ON RESET

SHIFT REGISTER LATCH

C2B I/F

DO

CE

DI

CL

ST/DO

CE

DI

CL

POWER SUPPLY (FM:ON)

(FM)

IC2801
C9ZB00000461
VIDEO DRIVE

Y/PY/G

CB/PB/B

CR/PR/R

Y

C

CY IN

CB IN

CR IN

Y IN

CV IN

C IN

SEL

MUTE 2

MUTE 1

VCC 1

GND

BIAS

CLAMP

6dB

12 MHz LPF

6 MHz LPF

75Ω

CY OUT

CB OUT

CR OUT

Y OUT

V OUT

C OUT

CY SAG

CB SAG

CR SAG

Y SAG

V SAG

GND2

Q2804 MUTING

Q2801 MUTING

IC2802
C1AB00001731
VIDEO BUFFER

IN1

IN2

SW

OUT

JK2001 Y(RED)

JK2001 CB(GREEN)

JK2001 CR(BLUE)

JK2001 VIDEO OUT

JK2001 S-VIDEO OUT

Q1100 (Q1200)

MUTING

Q1009

MUTING CONTROL

JK1001
21PIN AV JACK
(MONITOR OUT)

A (A) OUT
(A (B) OUT)

GREEN I/O

BLUE I/O

V OUT

RED I/O

FUNK SW

BLK I/O

IC1101
C9ZB00000461
VIDEO DRIVE

Q1007 AMP

IC1102
C1AB00001731
VIDEO BUFFER

Q1003 REGULATOR

Q1004 SWITCH

Q1005 SWITCH

Q1002 SWITCH

Q2805 INVERTER

IC2005
C1BB00001008
RDS DEMODULATOR

MUX

RDS CLK

RDS DA

Q1006 BUFFER

Q2006 MUTING

ZFLAG

DVD MUTE

DVD CLK

DVD CMD

DVD STAT

ST/DO

DI

SD

CE

CL

NC

TUN DO

TUN DI

TUN SD

TUN CLK

RDS DAT

RDS CLK

RGB IN

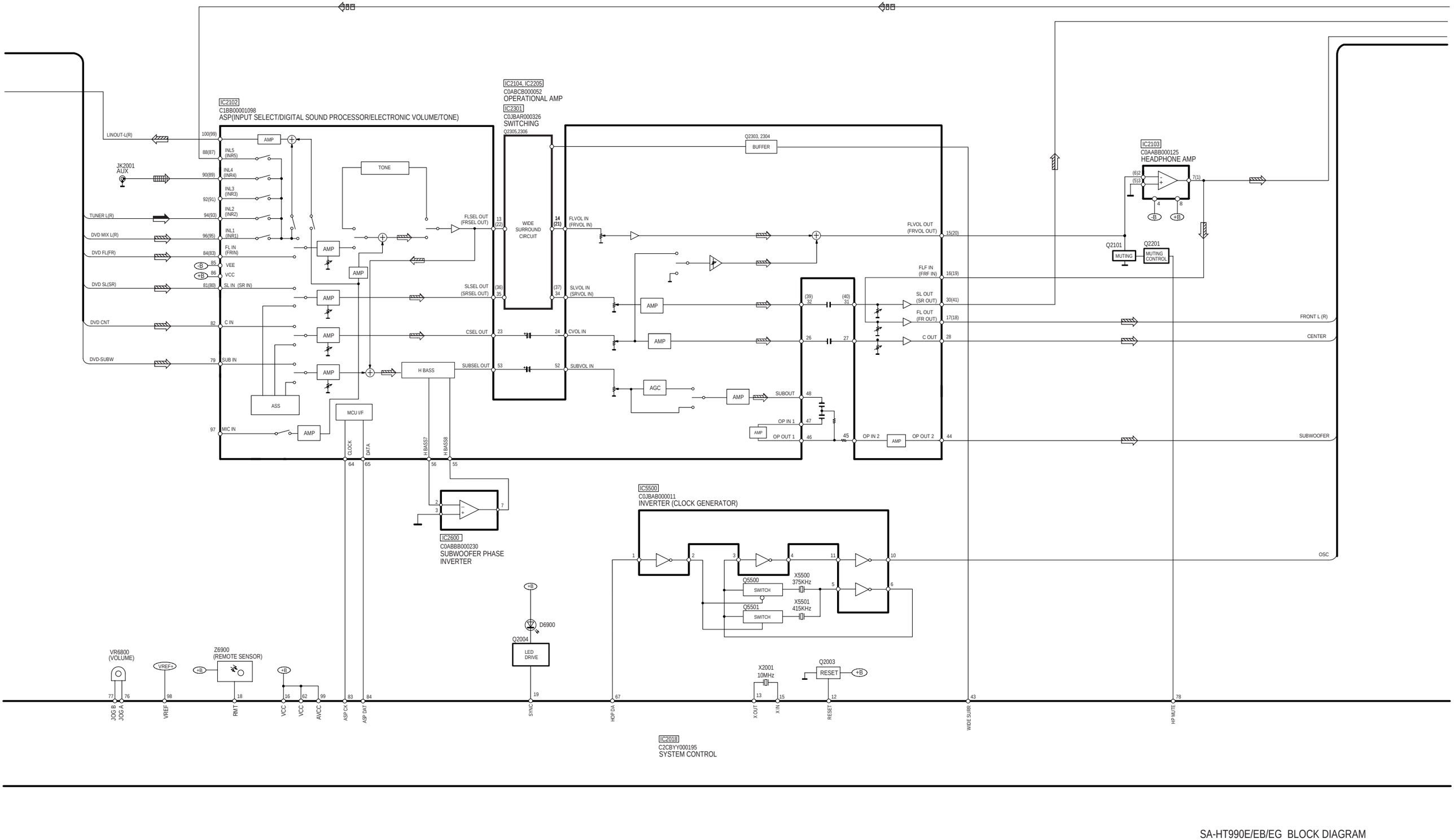
VIDEO MUTE

Y/C IN

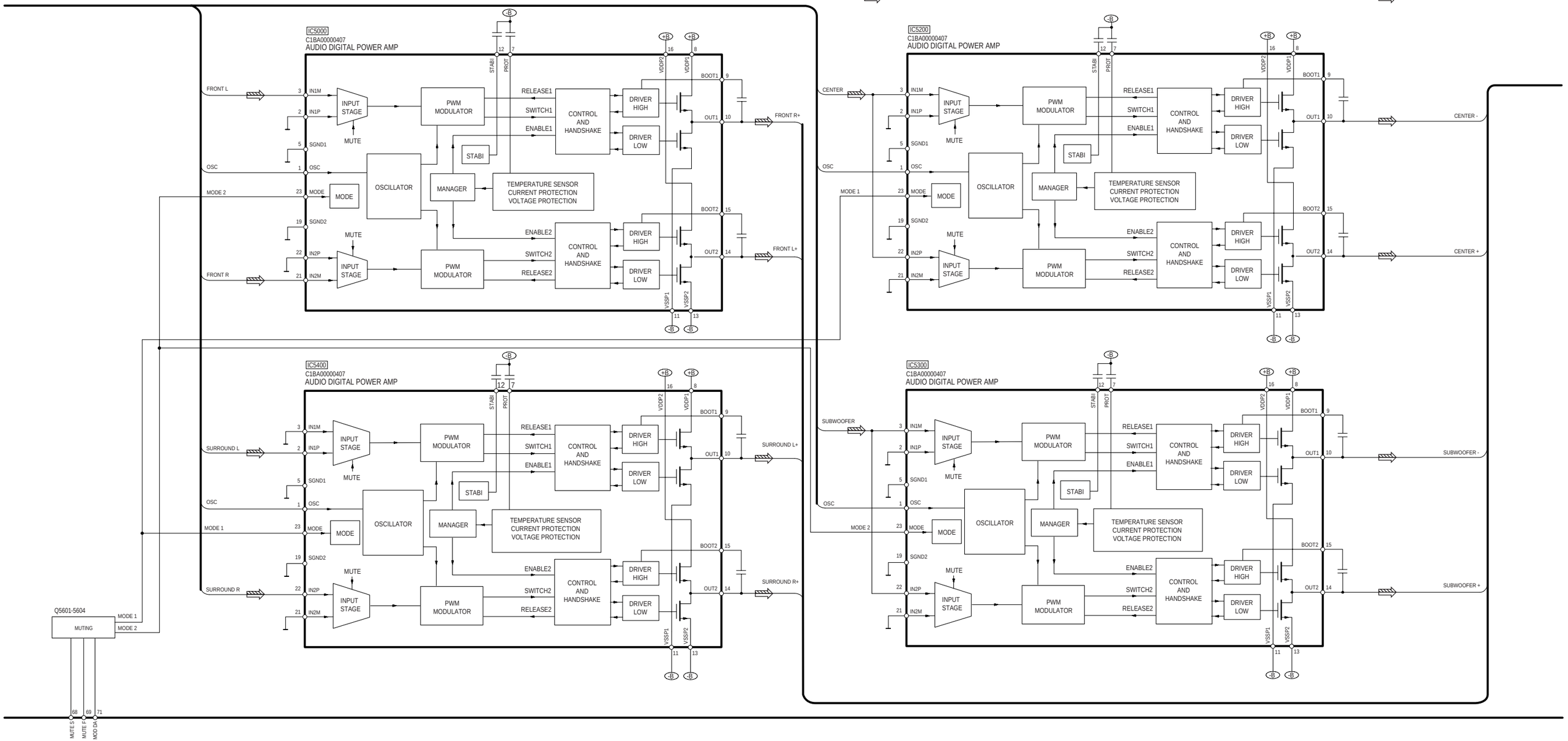
WIDE 16:9

SCART MUTE

IC2018
C2CBYY000195
SYSTEM CONTROL



SA-HT990E/EB/EG BLOCK DIAGRAM


IC5000
C1BA00000407
AUDIO DIGITAL POWER AMP
IC5200
C1BA00000407
AUDIO DIGITAL POWER AMP
IC5400
C1BA00000407
AUDIO DIGITAL POWER AMP
IC5300
C1BA00000407
AUDIO DIGITAL POWER AMP
IC2018
C2CBYY000195
SYSTEM CONTROL
Q5601-5604
MUTING
FRONT L
FRONT R
FRONT R+
FRONT L+
CENTER
CENTER -
CENTER +
SURROUND L
SURROUND R
SURROUND L+
SURROUND R+
SUBWOOFER
SUBWOOFER -
SUBWOOFER +
OSC
MODE 1
MODE 2
MUTE
INPUT STAGE
PWM MODULATOR
OSCILLATOR
MODE
MANAGER
STABI
TEMPERATURE SENSOR
CURRENT PROTECTION
VOLTAGE PROTECTION
CONTROL AND HANDSHAKE
DRIVER HIGH
DRIVER LOW
RELEASE1
SWITCH1
ENABLE1
ENABLE2
SWITCH2
RELEASE2
IN1M
IN1P
IN2P
IN2M
SGND1
SGND2
VDDP2
VDDP1
VSSP1
VSSP2
BOOT1
BOOT2
OUT1
OUT2
+B
-B
MUTE S
MUTE F
MOD DA

IC2105
C0ABCB000088
MUSICPORT AMP

F-MORT-LCH
Rch
JK6804
MUSIC PORT

JK6801
PHONES

SURROUND L+
SURROUND R+
FRONT L+
FRONT R+
CENTER+
CENTER-
SUBWOOFER+
SUBWOOFER-

JK5400
COIL
SPEAKERS

Q5101, 5102
DC DETECT

VREF+
Q2030
V REF CONTROL

IC904
C0GAY0000013
MOTOR DRIVE(LOADING)
LOADING MOTOR
DRIVE
CONTROL
V REF
VCC
GND
+B
S902
S901
TRY OPEN
TRY CLOSE
TRY CCW
TRY CW
BRAKE H

IC2004
EEPROM
(Not Supplied)
DI
DO
I/O
SK
EDA
ECS
ECK

Q2915
DC DETECT
DC DET
DVD PCONT

FL6901
FL DISPLAY
FL1
FL2

IC6901
C0HBB0000057
DISPLAY DRIVER
FL00
X OUT
X IN
D IN
CLK
STB
VCC
GND
VP
-B
FLD OUT
FLD CLK
FLD STB

KEY SWITCH
(S6806)
KEY SWITCH
(S6801-6805)
KEY1
KEY2

IC2018
C2CBYY000195
SYSTEM CONTROL
P CONT
SYNC
AM BP
VSS
AVSS

SIGNAL LINES

: MAIN SIGNAL LINE
: FM SIGNAL LINE
: FM OSC SIGNAL LINE
: AUX SIGNAL LINE
: AM SIGNAL LINE
: AM OSC SIGNAL LINE
: FM /AM SIGNAL LINE
: MUSIC PORT SIGNAL LINE
: DVD AUDIO SIGNAL LINE
: DVD VIDEO SIGNAL LINE
: CD-DA (AUDIO /VIDEO) SIGNAL LINE

( ) Indicates the Pin No. of Right Channel.

NOTE : Signal Lines are applicable to the Left Channel only.

Q5706,D5713 REGULATOR
Q5746
T5721
IC5721 C0DABYY00002 SWITCHING REGULATOR
BACKUP TRANSFORMER
D5723
PC5721
Q5704 CURRENT LIMITTING SWITCH
FEED BACK
Q2910,D2917 +12V REGULATOR
Q2903,D2902 +7V REGULATOR
Q2909 DC DETECT
Q2906,2907 -7V REGULATOR
Q5740-5742 Q5744,5751,5752 FAN MOTOR DRIVE
Q5750 DC DETECT
Q5745 FEED BACK
IC5702 C0DABFC00002 SHUNT REGULATOR
Q2912 +12V REGULATOR
Q5705
Q5748 SYNC SWITCH
Q2904,2913 D2915,2943 +5V REGULATOR
IC2903 C0DAAMH00012 SWITCHING REGULATOR
FP2000
T5701
D5711
D5712
D5716
D5748,49
D5741
POWER TRANSFORMER
D5701
L5704
DZ7501
L5701
P5701 AC INLET
F1
IC8111 C0CBCBD00018 +3.3V DC-DC CONVERTER
QR8111
POWER CONTROL
Q2955, D2941 +5V REGULATOR
Q2914, D2944 +2.7V REGULATOR
Q5701 CURRENT LIMMITTING SWITCH
Q5747 SWITCHING
IC5701 C5HABZZ00125 SWITCHING REGULATOR
PC5701
FEED BACK
IC8151 C0DBEHG00006 +1.2V REGULATOR
Q5710 SWITCHING

SCHEMATIC DIAGRAM-1

OPTICAL PICKUP UNIT CIRCUIT

TO HFM PCB

GND
VCC
GND
GND
OUT
GND

L4 J0JBC0000105
L3 J0JBC0000105
C8 0.1

TO LDU PCB

GND
TB
TA
TC
TD
FE1
FE2
IM
RF
GND
VREF
VCC
SUB2
SUB1
SW
LD (CD)
LD (DVD)
LDGND

R2 0
R4 0
C2 0.1
C1 0.1
C3 0.1
R1 0
VR1 6.8K
R3 0
R5 0
R6 0
R7 6.8K
VR2 6.8K
C5 22P
C6 22P
L2 J0JCC0000307
C7 0.1
C4 0.22
L1 J0JBC0000105

TOACT

T+
F+
F-
T-
HFM
TA
TB
TD
TC
FE2
FE1
GND (IM)
RF
VREF2(RF-)
PIN (DVD)
LD (CD)
LD GND
LD (DVD)
GND (OEIC)
VREF1
VCC
SUB2
SUB1
PIN(CD)
SUBSEL
GND (IM)

TO A DVD MODULE CIRCUIT (FP8531) ON SCHEMATIC DIAGRAM-1

A DVD MODULE (DV3.2) CIRCUIT

: +B SIGNAL LINE
: CD-DA SIGNAL LINE

TO SPINDLE TRAVERSE MOTOR ASS'Y

FP8251
TRV_INNER_SW
DGND
TRVM+
TRVM-
SPM+
SPM-

C8251 6.3V220P
C8261 0.1
C8262 0.1
R8230 2.2K
R8261 82k
R8263 82k
R8262 15K
R8264 15K
R8231 22K
C8231 0.1
R8232 7.5K
C8232 0.1
CL8251
R8251 6.8
C8256 0.1
C8255 16V22P
C8252 0.1
C8253 0.1
C8258 0.1
C8257 16V47P

IC8251
C0GBG0000048
MOTOR DRIVER

BIAS1
VIN1
VIN2
OPIN+
OPIN-
OPOUT
GND(PRE)
FIN
VCC(CH1.2)
MUTE12
GND(CH1.2)
VO2-
VO2+
VO1-
VO1+
LDCNT
MUTE3
TRIN
BIAS2
LDIN
VIN3
PREVCC
FIN
VCC(CH3.4)
MUTE4
GND(CH3.4)
VO3-
VO3+
VO4-
VO4+

K8251

LB8260 ERJ3GEY0R00V
LB8259 ERJ3GEY0R00V
LB8258 ERJ3GEY0R00V
LB8257 ERJ3GEY0R00V

TRV-I-SW
D+5V
FODRV
TRDRV
AD1
VHALF
SPMUTE
DRV0
DRV1
M+9V
TRVFTMUTE

QR8571
UNR511V00L
BUFFER
D8571 MA2J72800L
LB8571 J0JBC0000042
C8572 0.1
C8571 10

TO OPTICAL PICKUP UNIT

FP8531
T+
F+
F-
T-
HFM
TA(DVD)
TB(DVD)
TD(DVD)
TC(DVD)
FE2(DVD/CD)
FE1(DVD/CD)
GND
RF
VREF2(RF-)
PIN(DVD)
LDCD
LDGND
LDDVD
GND(OEIC)
VREF1
VCC
SUB2
SUB1
PIN(CD)
SUBSEL
GND(VRCD)

RX8532 (56 x 4)
RX8534 (56 x 2)
RX8531 (56 x 2)
RX8533 (56 x 2)

VIN1
VIN2
VIN4
VIN3
VIN8
VIN7
RFINP
RFINN
LPC1
VREFH
VIN6
VIN5
LPC2
RAM_CD

C8511 1
C8512 1
R8531 1.5K
C8531 100P
LB8561 J0JBC0000042
LB8551 J0JBC0000042
C8533 0.1
LB8531 ERJ2GE0R00X
R8532 2.2K
R8533 0
C8532 220P

SCHEMATIC DIAGRAM-2

A DVD MODULE (DV3.2) CIRCUIT

: MAIN SIGNAL LINE
: +B SIGNAL LINE
: DVD AUDIO SIGNAL LINE
: DVD VIDEO SIGNAL LINE

IC8151
C0DBEHG00006
REGULATOR
CTL VCC GND OUT ADJ
R8153 620
R8154 1K
C8152 1
C8151 4.7
VDD12
2R7V
D+3.3V

IC8111
C0CBCBD00018
3.3 REGULATOR IC
VO VIN NC NC GND NC CN Cont
C8112 1
C8113 470P
C8111 0.1
RX8111 (22K x 2)
D+5V

QR8111
XP0621400L
SWITCH
VDD12
HFMON

L8550
G1C100KA0055
A+5V
C8550 6.3V33P
LB8530 J0JHC0000045
C8561 0.1
R8567 51
R8566 56
C8563 6.3V47P
R8563 1K
C8562 16V10P
C8564 1
R8565 2.2
R8564 22
R8568 47K
Q8562
B1ADGB000008
SWITCH
R8561 0
R8562 1K
Q8561
2SD1819A0L
SWITCH
LPC02
C8530 0.1
AD0
C8551 0.1
R8557 51
R8558 47K
R8556 56
C8553 6.3V47P
R8553 1K
C8552 16V10P
C8554 1
R8555 2.2
R8554 68
R8559 15K
Q8552
B1ADGB000008
SWITCH
Q8551
2SD1819A0L
SWITCH
R8551 0
R8552 1K
LPC01

IC8691
C0JBAA000346
AND GATE LOGIC IC
VCC GND
OP_CPU_CLK

IC8695
C0JBAA000346
AND GATE LOGIC IC
GND
OP_CPU_STAT
OP_CPU_CMD

Y/PY/G
CB/PB/B
CR/PR/R
Y
C
C8424 0.1
C8422 0.1
R8420 2.2K
STBDAC
SBT3
SBO3
ADAC-CLK
DMIXOUT
SRCK
LRCK
C8428 0.1
C8426 0.1
AOUT0
AOUT1
AOUT2
ZERO1 MS MC MD SCK DATA1 BCK LRCK VDD DGND DATA2 DATA3 DATA4 MSEL
ZERO2 VOUT1 VOUT2 VCOM AGND2 VCC2 VOUT3 VOUT4 VOUT5 VOUT6 AGND1 VCC1 VOUT7 VOUT8
C8423 6.3V33P
C8427 0.1
C8421 6.3V100P
IC8421
C0FBBK000050
5-CH DAC IC
P13
AUDIODIGITAL
A+5V
2R7V
M+9V
D+5V
QR8420
UNR521100L
AUDIO MUTING SWITCH

LB8303 LB8304 LB8305 LB8301 LB8302 K8421 LB8421 LB8422 LB8425 LB8426 LB8427 LB8428 LB8429 LB8431 LB8423 LB8424 LB8491
J0JBC0000042
ERJ2GE0R00X

FP8101
VGND Y/PY/G VGND CB/PB/B VGND CR/PR/R VGND Y VGND C ADAC5V MIX-L ADAC5V MIX-R ADGND FL ADGND FR ADGND SL ADGND SR ADGND CNT ADGND SW A-REF ZFLAG&AMUTE DGND AUDIODIGITAL DGND D+5V DGND D+5V DGND A+5V AGND A+5V AGND 2R7V DGND 2R7V DGND M+9V MGND M+9V MGND DOP_CPU-CLK DOP_CPU-CMD DOP_CPU-STAT
50 49 48 47 46 45 44 43 42 41 40 39 38 37 36 35 34 33 32 31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

TO B MAIN CIRCUIT (CN2001) ON SCHEMATIC DIAGRAM-5

FL8103 F1H0J1050022
FL8102 F1H0J1050022
FL8101 F1H0J1050022
FL8104 F1J1E1040022
K8106

LB8690 J0JBC0000106
C8691 0.1
LB8691 ERJ2GEJ101X
C8695 0.1
LB8692 ERJ2GEJ101X
LB8693 ERJ2GEJ101X

SCHEMATIC DIAGRAM-3

A DVD MODULE (DV3.2) CIRCUIT

: +B SIGNAL LINE

IC8611
EEPROM
(NOT SUPPILED)
A0 A1 A2 GND
VCC WP SCL SDA
C8611 0.1
RX8611 (4.7K x 2)
SCL
SDA
R8611 100
RX8691 (10K x 2)
OP_CPU_CLK
OP_CPU_CMD
RX8001 (10K x 2)
SBT3
STBDAC
RX8032 (4.7K x 2)
EXTRG0

IC8651
RFKWMHA0B160
16M FLASH ROM
EXADR15 A15
EXADR14 A14
EXADR13 A13
EXADR12 A12
EXADR11 A11
EXADR10 A10
EXADR9 A9
EXADR8 A8
EXADR19 A19
EXADR20 A20
NEXWE XWE
PNRST XRESET
NC
WP/ACC
RDY/XBSY
EXADR18 A18
EXADR17 A17
EXADR7 A7
EXADR6 A6
EXADR5 A5
EXADR4 A4
EXADR3 A3
EXADR2 A2
EXADR1 A1
A16 EXADR16
XBYTE
VSS
DQ15/A-1 EXDT15
DQ7 EXDT7
DQ14 EXDT14
DQ6 EXDT6
DQ13 EXDT13
DQ5 EXDT5
DQ12 EXDT12
DQ4 EXDT4
VDD
DQ11 EXDT11
DQ3 EXDT3
DQ10 EXDT10
DQ2 EXDT2
DQ9 EXDT9
DQ1 EXDT1
DQ8 EXDT8
DQ0 EXDT0
XOE NEXOE
VSS
XCE NEXCE
A0 EXADR0
C8651 0.1
C8652 0.1

IC8051
C3ABPG000145
64MB SDRAM
C8051 1
C8052 0.1
C8053 0.1
C8054 220P
C8055 1
C8056 2200P
C8057 1
VDD VSS
MDQ0 DQ0 DQ15 MDQ15
VDDQ VSSQ
MDQ1 DQ1 DQ14 MDQ14
DQ2 DQ13
VSSQ VDDQ
DQ3 DQ12
MDQ4 DQ4 DQ11 MDQ11
VDDQ VSSQ
MDQ5 DQ5 DQ10 MDQ10
DQ6 DQ9
VSSQ VDDQ
DQ7 DQ8
VDD VSS
DQM0 LDQM NC
NWE /WE UDQM DQM1
NCAS /CAS CLK CLK
NRAS /RAS CKE
NCSM /CS NC
BA0 BA0 A11
BA1 BA1 A9
A10/AP A8
MA0 A0 A7 MA7
MA1 A1 A6 MA6
MA2 A2 A5 MA5
MA3 A3 A4 MA4
VDD VSS

RX8012 (82 x 4)
MDQ3
MDQ12
MDQ2
MDQ13
RX8014 (82 x 4)
MDQ7
MDQ8
MDQ6
MDQ9
RX8015 (82 x 4)
MA10
MA8
MA9
MA11

C8606 0.1
R8601 100K
IC8606
C0EBE0000455
RESET
VSS VDD OUT
NC CD
C8601 0.1
IC8601
C0EBA0000029
RESET
NIC VDD
GND OUT
C8602 0.015
PNRST

C8018 0.1
C8019 0.1
C8020 0.1
C8006 0.1
EXADR0
NEXCE
NEXOE
EXDT0
EXDT8
EXDT1
EXDT9
EXDT2
EXDT10
EXDT3
EXDT11
EXDT4
EXDT12
EXDT5
C8021 0.1
EXDT13
EXDT6
EXDT14
EXDT7
EXDT15
EXADR16
EXADR15
EXADR14
C8007 0.1
EXADR13
EXADR12
EXADR11
EXADR10
EXADR9
EXADR8
C8022 0.1
EXADR19
NEXWE
EXADR18
EXADR17
EXADR7
EXADR6
EXADR5
EXADR4
EXADR3
EXADR2
EXADR1
C8008 0.1

SCHEMATIC DIAGRAM-4

A DVD MODULE (DV3.2) CIRCUIT

: CD-DA SIGNAL LINE
: +B SIGNAL LINE
: DVD VIDEO SIGNAL LINE
: DVD AUDIO SIGNAL LINE

IC8001
MN2DS0009AP
DV3.2 LSI

SA-HT990E/EB/EG DVD MODULE (DV3.2) CIRCUIT

40 41 42 43 44 45 46 47 48 49 50 51 52

H G F E D C B A

SCHEMATIC DIAGRAM-5

B MAIN CIRCUIT

:+B SIGNAL LINE :-B SIGNAL LINE : AUX SIGNAL LINE : MUSIC PORT SIGNAL LINE : DVD VIDEO SIGNAL LINE

CN2001
STATUS DVD_STA
CMD DVD_CMD
DSPCLK DVD_CK
MGND
M+9V M+9V
MGND
M+9V
DGND
2.7V DVD_2.7
DGND
2.7V
AGND
A+5V L2009 G0C220JA0055 DVD_D+5V
AGND
A+5V C2021 10V220
DGND
D+5V
DGND
D+5V R2006 1.8K MUTE_DVD
DGND
DGND Q2006 B1GBCFJN0033 MUTING
ZFLAG
SUBW C2600 1 R2600 3.3K DVD-SUBW
ADACGND
CENTER C2500 1 R2500 22K DVD-CNT
ADACGND
SR C2400 1 R2400 22K DVD-SR
ADACGND
SL C2300 1 R2300 22K DVD-SL
ADACGND
FR C2201 1 R2201 10K DVD-FR
ADACGND
FL C2101 1 R2101 10K DVD-FL
ADACGND
MIXR C2211 1 R2211 10K MIXR
ADAC5V DVD_A+5V
MIXL MIXL
ADAC5V C2111 1 R2111 10K
C C
VGND
Y Y
VGND
CR/PR/R CR
VGND
CB/PB/B CB
VGND
PY/Y/G PY
VGND
R2291 18K R2191 18K

TO A DVD MODULE CIRCUIT (FP8101) on SCHEMATIC DIAGRAM- 2

TO C TUNER EXTENT CIRCUIT (CN2010) on SCHEMATIC DIAGRAM-14

CN2002
TUNERGND
T+9V TUN+9V
RDS DETECT RDS_DET
TUNER RCH C2261 0.039 R2260 33K TUN_RCH
TUNER DO/ST TU_ST
TUNER LCH C2161 0.039 R2160 33K TUN_LCH
TUNER SD TU_SD
TUNER DI TU_DI
TUNER CLK TU_CLK
PORT_SEL TU_CLK
C2022 10V680 C2026 1 C2169 0.01 R2161 47K C2162 220P R2261 47K C2262 220P

INR5
+7V
F_MPORT-RCH C2285 1 R2282 1K R2281 3.3K
C2296 1000P
C2288 100P C2287 1000P C2289 0.1
C2625 0.01
IC2105 C0ABBB000230 DUAL OP AMP (MUSIC PORT)
IC2600 C0ABBB000230 DUAL OP AMP INVERTER
-7V
C2189 0.1 C2188 100P C2187 1000P
F_MPORT-LCH C2185 1 R2182 1K R2181 3.3K
C2186 1000P
R2629 10K R2628 10K
INL5
BRAKE_H VIDEO_+5V CR CB PY Y C
L2801 G0C220JA0055 DVD_A+5V
C2807 0.01 C2808 10V220
L2809 G0A200000002
C2820 100P C2821 100P C2822 100P C2819 100P
C2818 1 C2817 1 C2811 0.1 C2812 0.1 C2810 0.01

TO I TRAY LOADING CIRCUIT (CS901) on SCHEMATIC DIAGRAM-14

CN2004
TRAY_OPEN TRAY_OPEN
TRAY_CLOSE TRAY_CLOSE
TRAY_CCW TRAY_CCW
GND(MGND) D2936 B0EAKM000117 D2935 B0EAKM000117
C+7.5V M+9V
TRAY_CW TRAY_CW
VREF R2942 2.2K R2943 2.7K
Q2030 B1GBCFJN0033 V REF CONTROL

C2841 6.3V1000
R2804 1K R2807 1K R2803 1K
C2809 10V220
VIDEO_MUTE Q2801 B1GBCFJN0033 MUTING
D2800 B0ACCK000005
RGB Q2804 B1GBCFJN0033 MUTING
WIDE_OUT
WIDE Q2805 B1GBCFJN0033 INVERTER
IC2802 C1AB00001731 VIDEO BUFFER
VCC OUT SW IN2 GND IN1
C2803 1 C2804 1
IC2801 C9ZB00000461 VIDEO DRIVER
VCC2 CRIN MUTE2 CBIN GND CYIN SEL BIAS YIN SEL CVIN MUTE1 CIN S2 S1 VCC1
CRSAG CROUT GND2 CBSAG CBOUT GND2 CYSAG CYOUT GND2 YSAG YOUT GND2 VSAG VOUT SDCOUT COUT
C2806 6.3V330 C2805 6.3V330 C2802 6.3V1000 C2801 0.1

JK2001
TV/VCR AUDIO IN
R-CH R2264 10K AUX-LCH
L-CH R2164 10K AUX-RCH
C2164 220P C2264 220P R2165 6.8K R2265 6.8K
COMPONENT VIDEO OUT
PB L2802 J0JBC0000015 R2809 75
PR L2803 J0JBC0000015 R2812 75
C2825 100P C2823 100P
Y L2804 J0JBC0000015 R2813 75
S-VIDEO OUT L2805 J0JBC0000015 R2816 75
C2827 100P C2826 100P C2833 100P
COUT L2806 J0JBC0000015 R2817 75
S-VIDEO C2828 100P
L2807 J0JBC0000015 R2818 75
YOUT C2829 100P
C2840 6.3V1000
C2831 680P C2830 100P C2832 100P

SCHEMATIC DIAGRAM-6

B MAIN CIRCUIT

: +B SIGNAL LINE

IC2018
C2CBYY000195
MICRO-PROCESSOR

IC2005
C1BB00001008
RDS DEMODULATOR

IC2004
EEPOM
(NOT SUPPLIED)

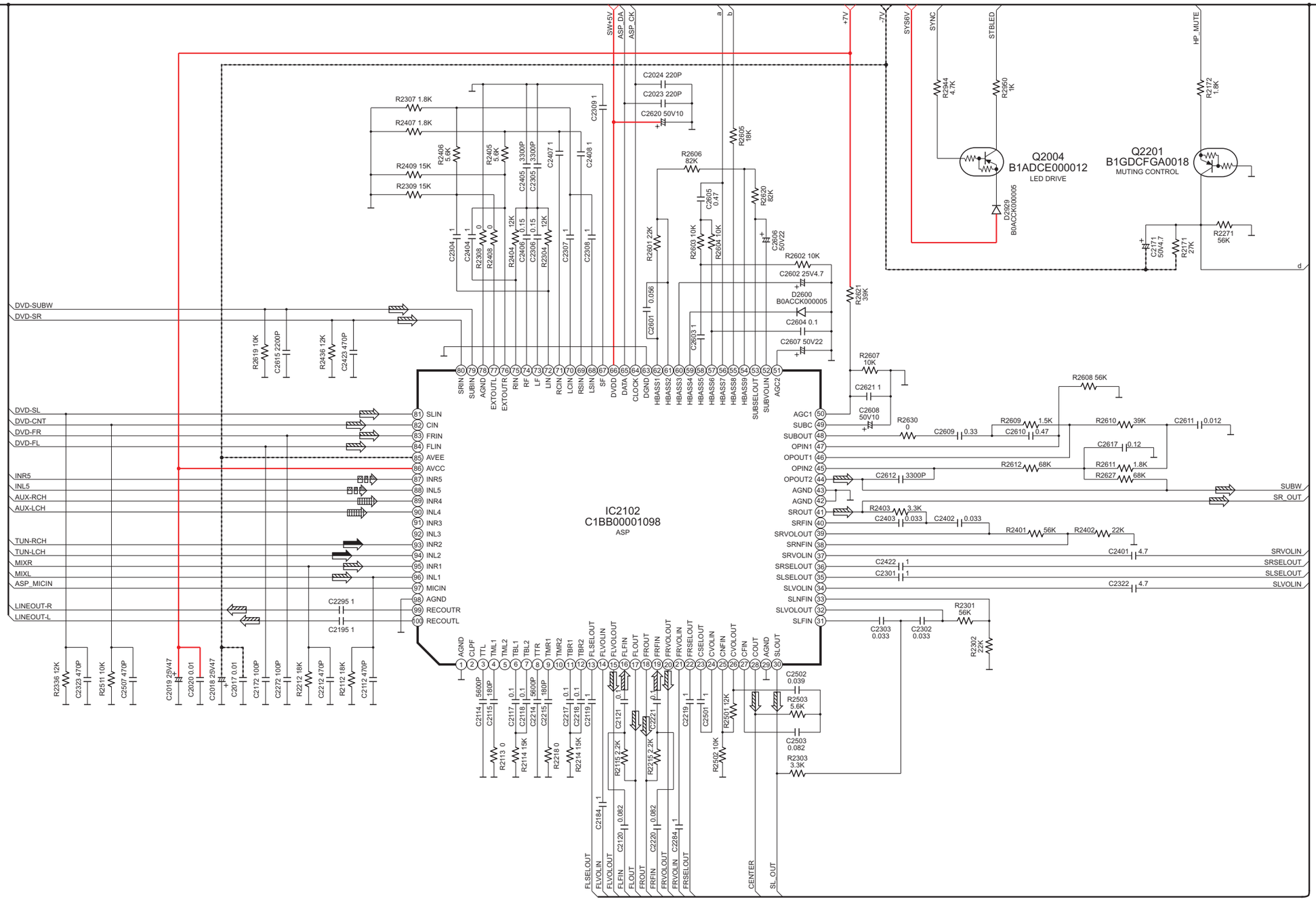
Q2003
B1GBCFLL0037
RESET

14	15	16	17	18	19	20	21	22	23	24	25	26

SCHEMATIC DIAGRAM-7

B MAIN CIRCUIT

—— :+B SIGNAL LINE ---- :-B SIGNAL LINE : MAIN SIGNAL LINE : AUX SIGNAL LINE : FM /AM SIGNAL LINE : MUSIC PORT SIGNAL LINE



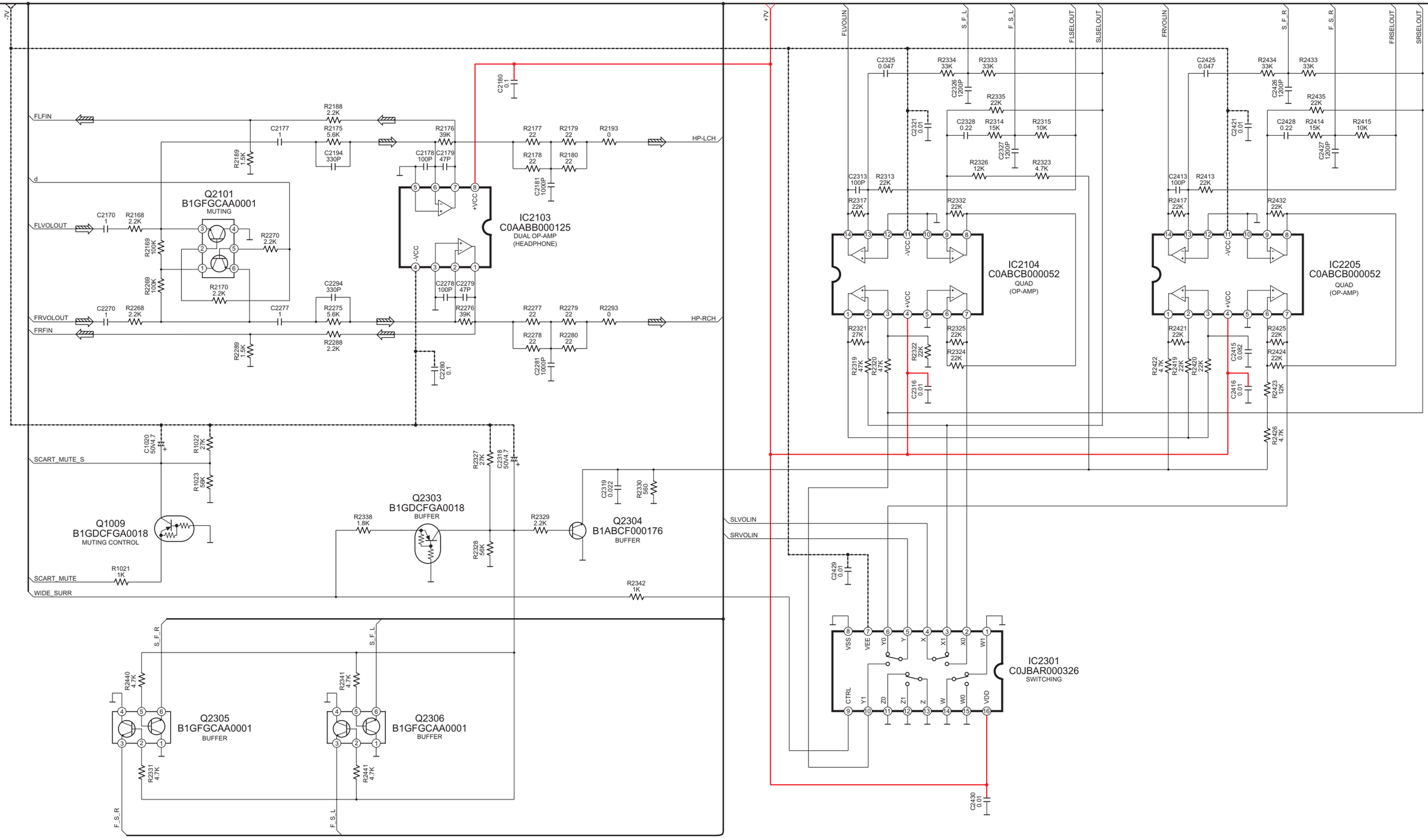
SA-HT990E/EB/EG MAIN CIRCUIT

27	28	29	30	31	32	33	34	35	36	37	38	39

SCHEMATIC DIAGRAM-8

B MAIN CIRCUIT

—— :+B SIGNAL LINE ----- :-B SIGNAL LINE ⇒ : MAIN SIGNAL LINE



40	41	42	43	44	45	46	47	48	49	50	51	52

SCHEMATIC DIAGRAM-9

B MAIN CIRCUIT

:+B SIGNAL LINE :-B SIGNAL LINE : MAIN SIGNAL LINE : MUSIC PORT SIGNAL LINE : DVD VIDEO SIGNAL LINE

TUN+9V
M+9V
SW+5V
D_AMP+5V
RF+5V
+12V
DC_DET
DVD_PCONT
+7V
-7V
DVD_A+5V
DVD_D+5V
DVD_2.7
DVD_PCONT

Q2912 B1BACD000018 +12V REGULATOR
R2976 4.7
L2910 G0C220JA0055
C2956 0.1
C2962 16V220

Q2904 B1AAKD000012 +5V REGULATOR
C2945 0.01
R2933 150
R2934 820
C2946 16V47
C2959 0.1
D2915 B0BC5R700006

Q2913 B1BACG000023 +5V REGULATOR
C2940 0.01
R2960 100
R2970 22
R2969 680
R2968 680
R2967 680
C2941 16V220
D2943 B0BC4R600016
D2942 B0BC5R000009

D2921 B0ACCK000005
D2923 B0ACCK000005
D2918 B0ACCK000005

Q2910 B1AAKD000012 +12V REGULATOR
R2949 1K
C2948 0.01
R2924 100
R2940 3.3
C2949 50V4.7
C2960 0.1
D2917 B0BC01300001

D2906 B0ADCJ000020
D2907 B0ADCJ000020

Q2903 B1BACD000018 +7V REGULATOR
R2951 47
C2902 0.01
C2901 50V10
R2907 27K
R2908 560
C2906 0.01
R2904 470
R2905 6.8K
C2908 16V220
C2963 0.1
D2902 B0BC7R500001

Q2915 B1GBCFJN0033 DC DETECT
Q2909 B1GBCFJN0033 DC DETECT
R2922 39K
R2923 15K

Q2906 B1BCCG000002 CURRENT LIMITER
R2906 470
R2913 470
R2952 470
R2914 6.8K
C2961 0.1
C2914 10V33
R2915 2.7K
C2910 0.01
C2903 0.01
C2964 0.1
C2913 16V220

Q2907 B1ADCE000012 STABILIZER

D2919 B0ADCJ000020

Q2955 B1BACD000018 +5V REGULATOR
C2966 0.1
R2964 22
R2929 22
C2968 10V1000
D2941 B0BC5R600003

L2911 G0A200D00002
D2937 B0EAKM000117
D2938 B0EAKM000117
D2939 B0EAKM000117

Q2914 B1BACD000018 +2.7V REGULATOR
R2971 1.5
R2926 1.5
C2924 0.01
R2972 22
R2973 150
C2925 10V220
D2944 B0BC3R700004
C2965 0.1
C2967 10V220

IC2903 C0DAAMH00012 SWITCHING REGULATOR
STBY INV GND OUT VCC

L2903 G0A200D00002
L2902 G0A101G00022
C2930 1
C2923 16V220
D2945 B0BC7R500001
C2922 6.3V47
R2921 330
D2904 B0JCPD000025
R2920 4.7K
R2919 1K
C2920 0.01
R2918 10K
C2919 100P
R2935 4.7K

L2909 G0A200D00002
FP2000 2A
C2952 0.01
C2921 50V100
LB5707 J0JKB0000020

R2974 4.7
R2975 4.7

C2324 0.018
FLOUT C2183 1 R2185 1.2K
FROUT C2283 1 R2285 1.2K
SUBW C2619 50V10 R2617 6.8K
SL_OUT C2312 1 R2312 1K
SR_OUT C2412 1 R2412 1K
CENTER C2506 1 R2510 3.3K
C2424 0.018
C2509 5600P
R2512 2.7K
R2439 2.7K
R2339 2.7K
R2636 68K
R2294 2.7K
R2194 2.7K

D2601 B0ACCK000005
D2603 B0ACCK000005

PCONT
FL1
FL2

MUTE_F
MUTE_S

GNDE

AM_BP
HOP_DA
D_AMP+5V
DC_DET

-30V_M
DC_13V
+30V
GNDE
-30V
GNDE
DC_18V
DC_DET
GNDE
SYS6V
SYNC
GNDE

SYS6V
SYNC

-VP
FRONTL
GNDE
FRONTR
GNDE
SUBW_OUT
GNDE
SURL_OUT
GNDE
SURR_OUT
GNDE
CENTER_OUT
GNDE

CN2007
R2936 56
SW+5V
FLD_STB
FLD_OUT
FLD_CLK
FLGND
JOG_A
VREF
DGND
KEY2
JOG_B
FL1
-VP
FL2
HP-LCH
AGND(HPGND)
HP-RCH

TO E FL CIRCUIT (CN6901) on SCHEMATIC DIAGRAM-14

CN2006
KEY1
F_MPORT-LCH
AGND/MPGND
F_MPORT-RCH
RMT
DGND
STBLED
VREF
SW+5V
WSURR_LED

TO F MUSIC PORT CIRCUIT (CN6902) on SCHEMATIC DIAGRAM-14

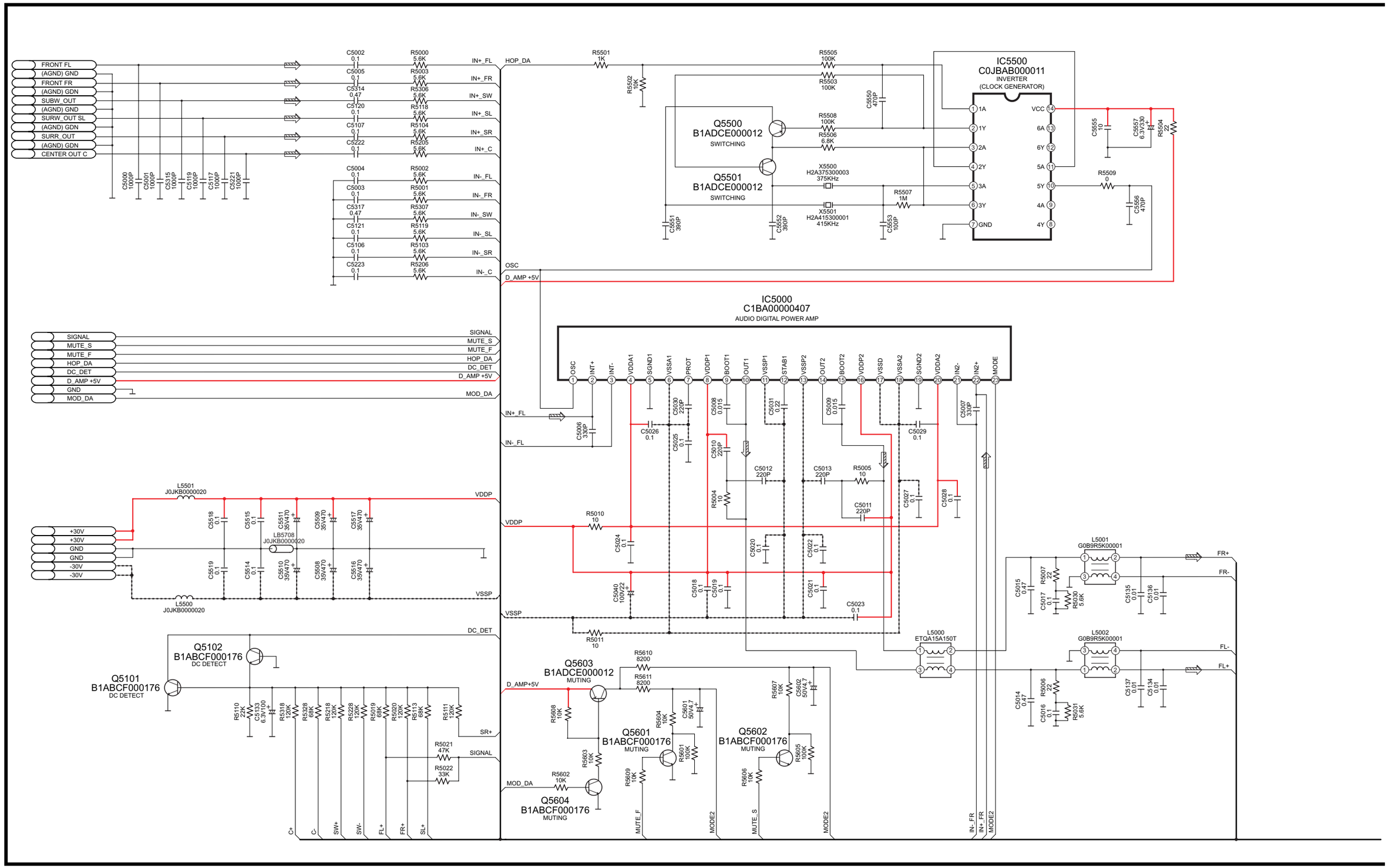
CN2008
+12V
DVD_A+5V
WIDE_OUT
RGB
C
VGND
Y
VGND
PY
VIDEO_MUTE
CB
SCART_MUTE_S
CR
YC_H
LINEOUT-R
ROUT
TV-RCH
RIN
AGND
TV-LCH
LIN
LINEOUT-L
LOUT

TO H SCART CIRCUIT (CN1001) on SCHEMATIC DIAGRAM-15

SCHEMATIC DIAGRAM-10

B POWER(DIGITAL AMP) CIRCUIT

:MAIN SIGNAL LINE — :+B SIGNAL LINE ----- :-B SIGNAL LINE

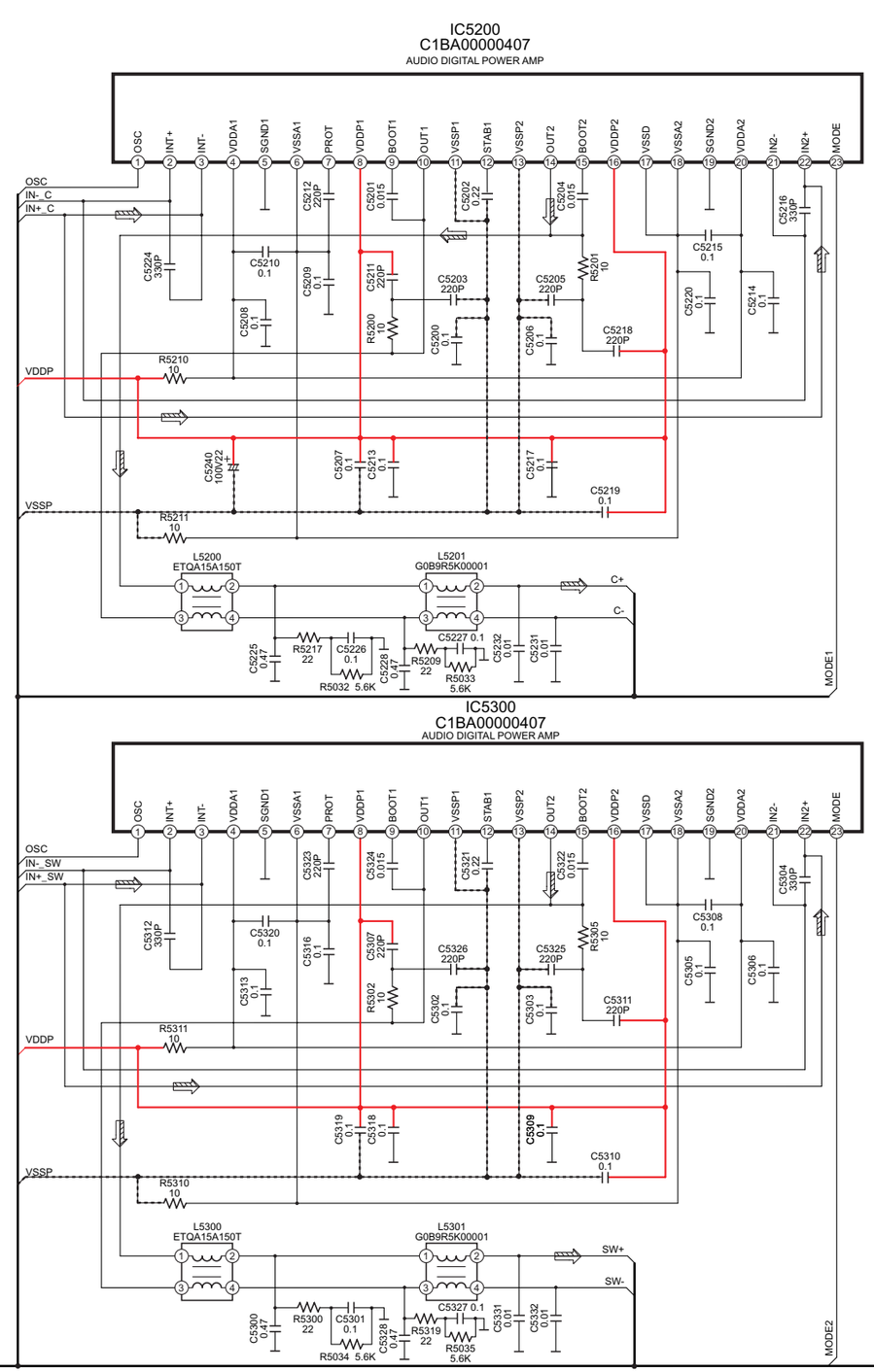


SA-HT990E/EB/EG POWER(DIGITAL AMP) CIRCUIT

SCHEMATIC DIAGRAM-11

B POWER(DIGITAL AMP) CIRCUIT

:MAIN SIGNAL LINE — :+B SIGNAL LINE - - - :-B SIGNAL LINE



SA-HT990E/EB/EG POWER(DIGITAL AMP) CIRCUIT

14 15 16 17 18 19 20 21 22 23 24 25 26

H G F E D C B A

SCHEMATIC DIAGRAM-12

B POWER(SMPS) CIRCUIT

—— :+B SIGNAL LINE ----- :-B SIGNAL LINE

CN5714
TO FAN UNIT
FANDCOUT
GND

CN5704
TO FAN UNIT
FANDCOUT
GND
FANLOCK

Q5752 B1ABCF000176 FAN MOTOR DRIVE
Q5751 B1ABCF000176 FAN MOTOR DRIVE
Q5741 B1ABCF000176 FAN MOTOR DRIVE
Q5742 B1ABCF000176 FAN MOTOR DRIVE
Q5744 B1ABCF000176 FAN MOTOR DRIVE
Q5740 B1BACG000048 FAN MOTOR DRIVE

R5768 2.2K
R5769 220K
R5767 1K
C5786 10V220
D5753 B0JCAE000001
D5754 B0JCAE000001
C5765 50V4.7
R5746 33K
R5754 22K
R5747 3.9K
C5792 10V220
C5794 50V4.7
R5766 22
R5745 0
R5757 10K
R5755 10K
R5739 1200
C5790 0.001
C5791 50V47
R5737 22
D5740 B0BC01300001
R5736 1500
R5791 1200
C5775 0.1
R5792 2.2M
C5739 50V10
R5756 10K
R5760 10K
R5759 100K
D5743 B0ACCK000005
D5744 B0ACCK000005
C5797 50V4.7
D5750 B0ACCK000005

SIGNAL
DC_DET

To AMP
+30V
GNDE
-30V

To Main Set
+30V
SYS6V
-30V
FL1
FL2
SYNC
PCONT
-VP
AM_BP
VCC_CTRL
DC_13V
DC_18V
GNDE
GNDE

L5710 G0C220JA0055 SYS6V_S

DC_DET
D_AMP+5V
-30V_M

Q5750 B1GBCFJN0033 DC DETECT
R5796 10K
R5797 12K
R5782 47K
R5781 47
R5799 47

Q5710 2SC3940ARA SWITCHING
R5764 1K
R5765 47
R5798 47
AM_BP
MGND
DC_GND

DC_18V

R5713 1.8K
C5761 0.1
R5728 1.8K
R5714 47K
R5735

D5712 B0HBSM000043
35V2200
C5718 35V2200
C5749 0.1
C5771 1200P

C5770 1200P
D5711 B0HBSM000043
C5748 0.1
C5717

D5748 B0EAMM000057
D5749 B0EAMM000057
C5772 0.01
LB5705 J0JKB0000020
C5796 35V470
C5747 0.1
DC_13V

D5716 B0HFRJ000012
C5773 1200P
LB5706 J0JKB0000020
C5742 35V14700
C5746 0.1
DC_18V

T5701 ETS42BJ1F6AC
D5741 B0EAMM000057
C5774 0.01
C5741 10V220

R5729 10K
R5712 2200

IC5702 C0DABFC00002 SHUNT REGULATOR
R
A
C
C5720 0.1
R5715 15K
R5763 2200

PC5701 B3PBA0000237
R5708 3300
R5716 68
R5702 0

Q5706 B1BACD000018 REGULATOR
D5713 B0BC4R0A0006
C5715 10V100

R5918 220
R5917 220
D5903 B0BC01200019
D5923 B0BC01200019
C5916 50V100

-30V_M
-VP
FL2
FL1

SCHEMATIC DIAGRAM-13

B POWER(SMPS) CIRCUIT

— :+B SIGNAL LINE

D AC-INLET CIRCUIT

D5701 B0FBAR000018
TH5701 D4CAC3R00002
C5706 250V0.1
L5704 ELF22V035B
C5737 F1BAF222O023
C5736 F1BAF222O023
R5705 390K
C5716 400V180
R5784 390K
R5778 4.7

F1 4A 250V
ZA5702 EYF52BCY
ZA5701 EYF52BCY
R5751 470K
R5758 470K
C5701 250V0.1
DZ5701 ERZV10V511CS
P5701
230V 50Hz...E/EG
230V-240V 50Hz...EB
CHASSIS GND
CN5710
CN5711

C5708 630V0.01
R5707 33K
R5706 33K
D5702 B0ZAZ0000052
D5707 B0BC035A0007
D5705 B0EAMM000057
Q5701 2SC3940ARA CURRENT LIMMITTING SWITCH
Q5747 B1GDCFGA0018 SWITCHING
R5710 10K
C5713 0.001
R5709 2200
D5710 B0EAMM000057
D5709 B0ACCK000005
D5708 B0BC01700015
C5712 220P
D5706 B0EAMM000057
R5711 22

Q5748 B3PBA0000237 SYNC SWITCH
SYS6V_S
SYNC
Q5705 B1ABCF000176 INVERTER
R5786 100K
C5722 0.1

IC5701 C5HABZZ00125 SWITCHING REGULATOR
FB SOURCE DRAIN VCC GND
C5776 0.1
C5710 1500P
D5703 B0BC02900004
D5704 B0JAME000029
C5711 50V56
C5709 470P
R5703 680
LB5704 J0JKB0000020
R5704 0.068
C5757 2200P
D5747 B0ACZK000005

T5721 ETS19AB1Z6AG
D5723 B0EAMM000057
R5724 1.2K
R5725 560
C5733 16V220
R5771 10
D5721 B0EAMM000057
C5727 47P
R5772 4.7
ZJ5701 K4CZ01000027

R5776 330
C5732 0.1
R5726 1K
Q5704 B1ABCF000176 CURRENT LIMITTING SWITCH
D5724 B0BC3R700004
R5723 4.7K

IC5721 C0DABYY00002 SWITCHING REGULATOR
D D START
OCP VCC GND FB
C5729 50V22
C5777 0.1

PC5721 B3PBA0000237
R5727 2.2K

Q5745 B3PBA0000237 FEED BACK
Q5746 B1GBCFLL0037 PCONT SWITCH
R5779 1K
PCONT

R5774 4.7
D5746 B0BC5R600003
R5777 120
D5752 B0BC5R000009
C5738 680P
C5725 50V4.7

D5745 B0EAKM000117

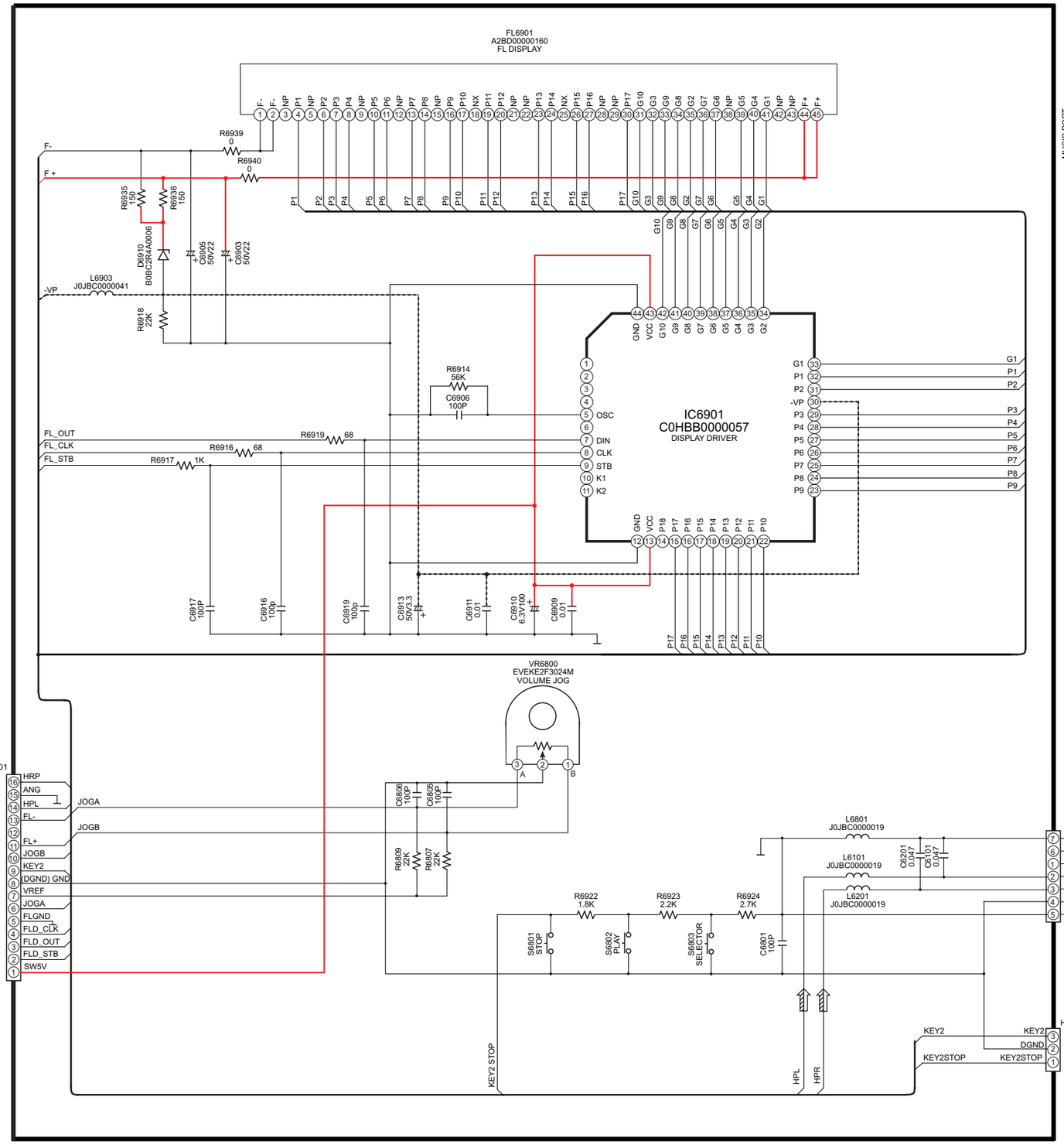
SA-HT990E/EB/EG POWER(SMPS) CIRCUIT

14 15 16 17 18 19 20 21 22 23 24 25 26

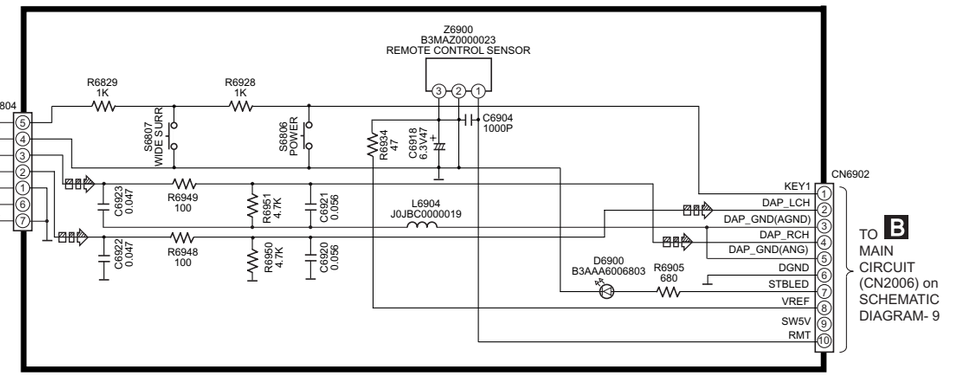
H G F E D C B A

E FL CIRCUIT

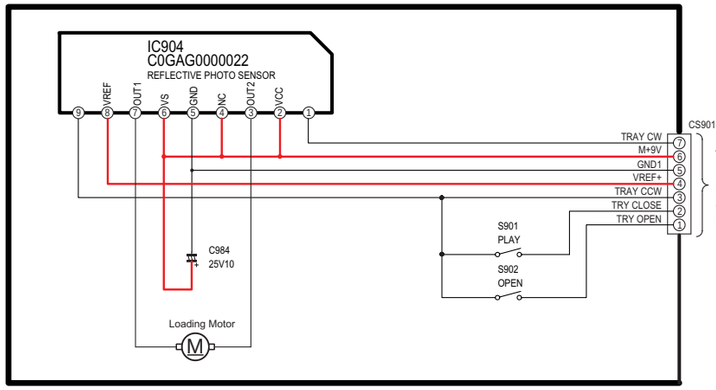
:+B SIGNAL LINE　:-B SIGNAL LINE　: MUSIC PORT SIGNAL LINE　: MAIN SIGNAL LINE



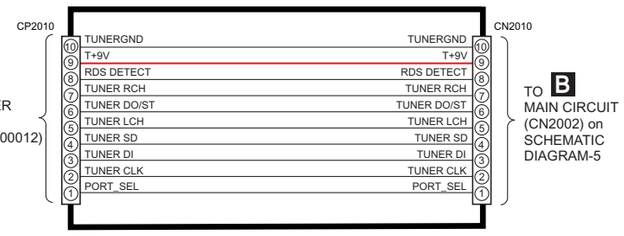
F MUSIC PORT CIRCUIT



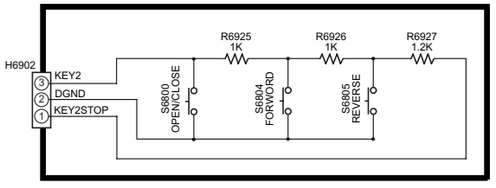
I TRAY LOADING CIRCUIT



C TUNER EXTENT CIRCUIT



G TOP BUTTON CIRCUIT

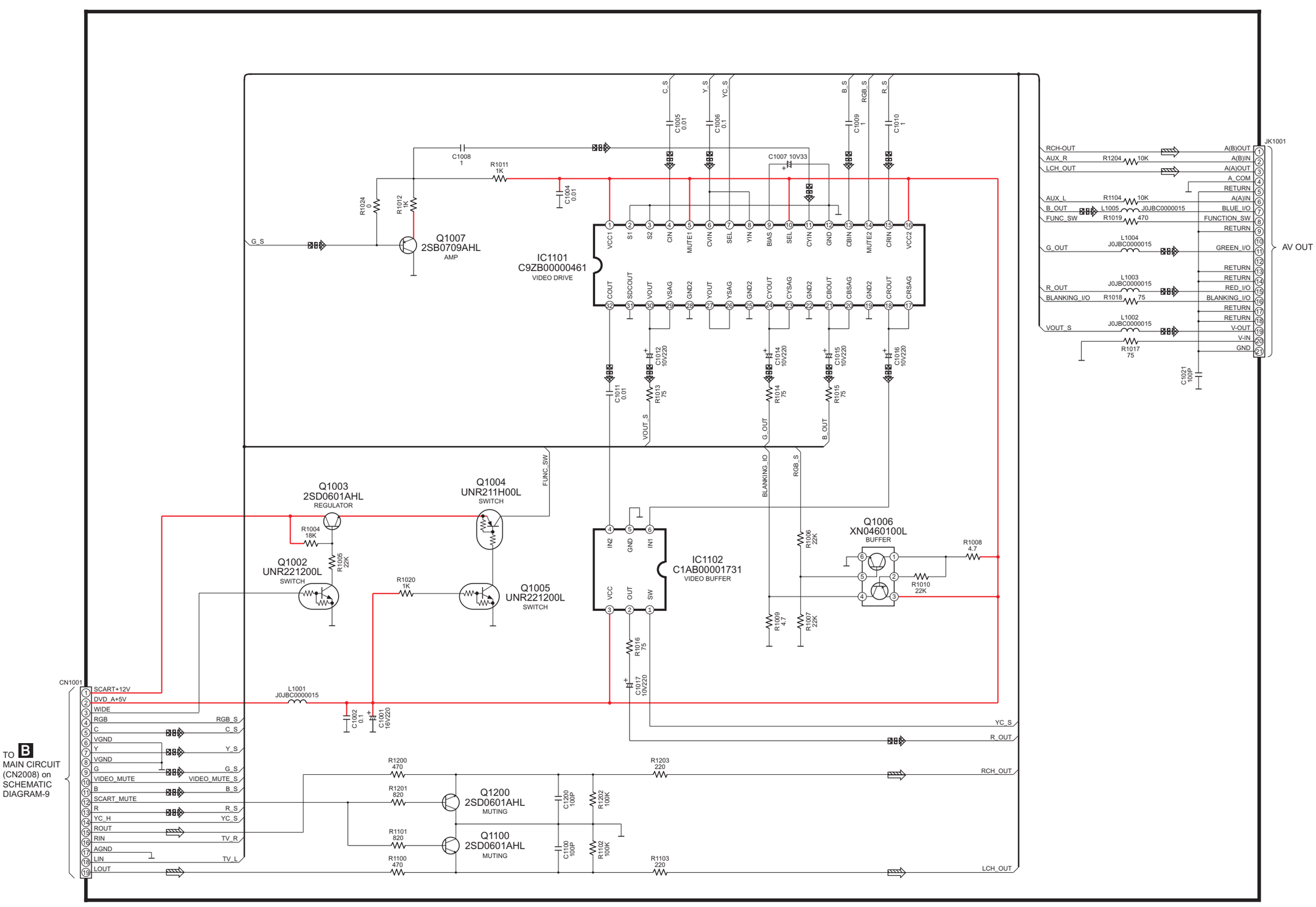


SA-HT990E/EB/EG FL/ MUSIC PORT/ TRAY LOADING/ TUNER EXTENT/ TOP BUTTON CIRCUIT

SCHEMATIC DIAGRAM - 15

H SCART CIRCUIT

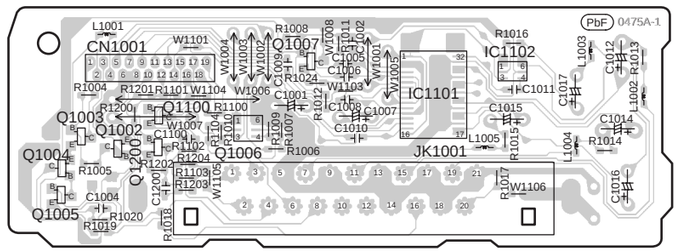
—— :+B SIGNAL LINE ⇨ : MAIN SIGNAL LINE ⇨ : DVD VIDEO SIGNAL LINE



SA-HT990E/EB/EG SCART CIRCUIT

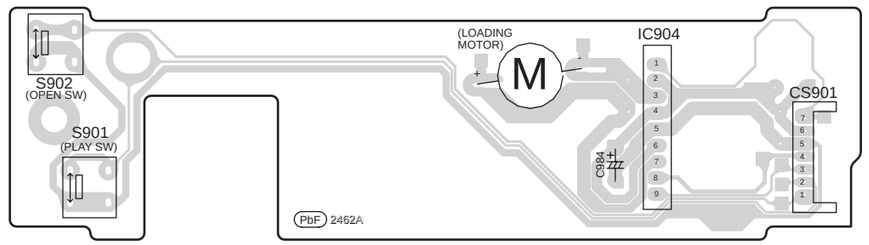
1 2 3 4 5 6 7 8 9 10 11 12 13

H SCART P.C.B. (REPX0535A)



AV OUT

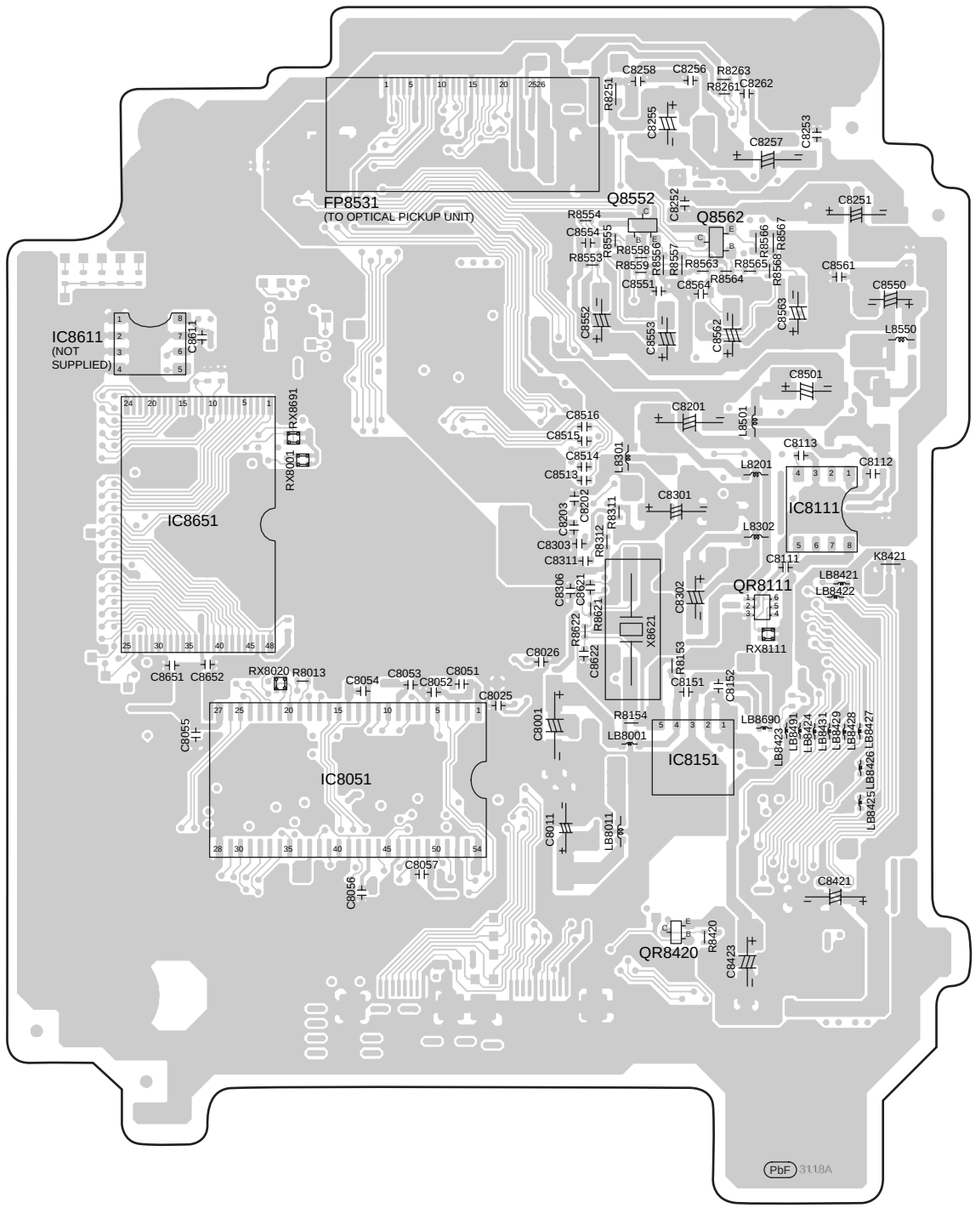
I TRAY LOADING P.C.B. (REP3288B)



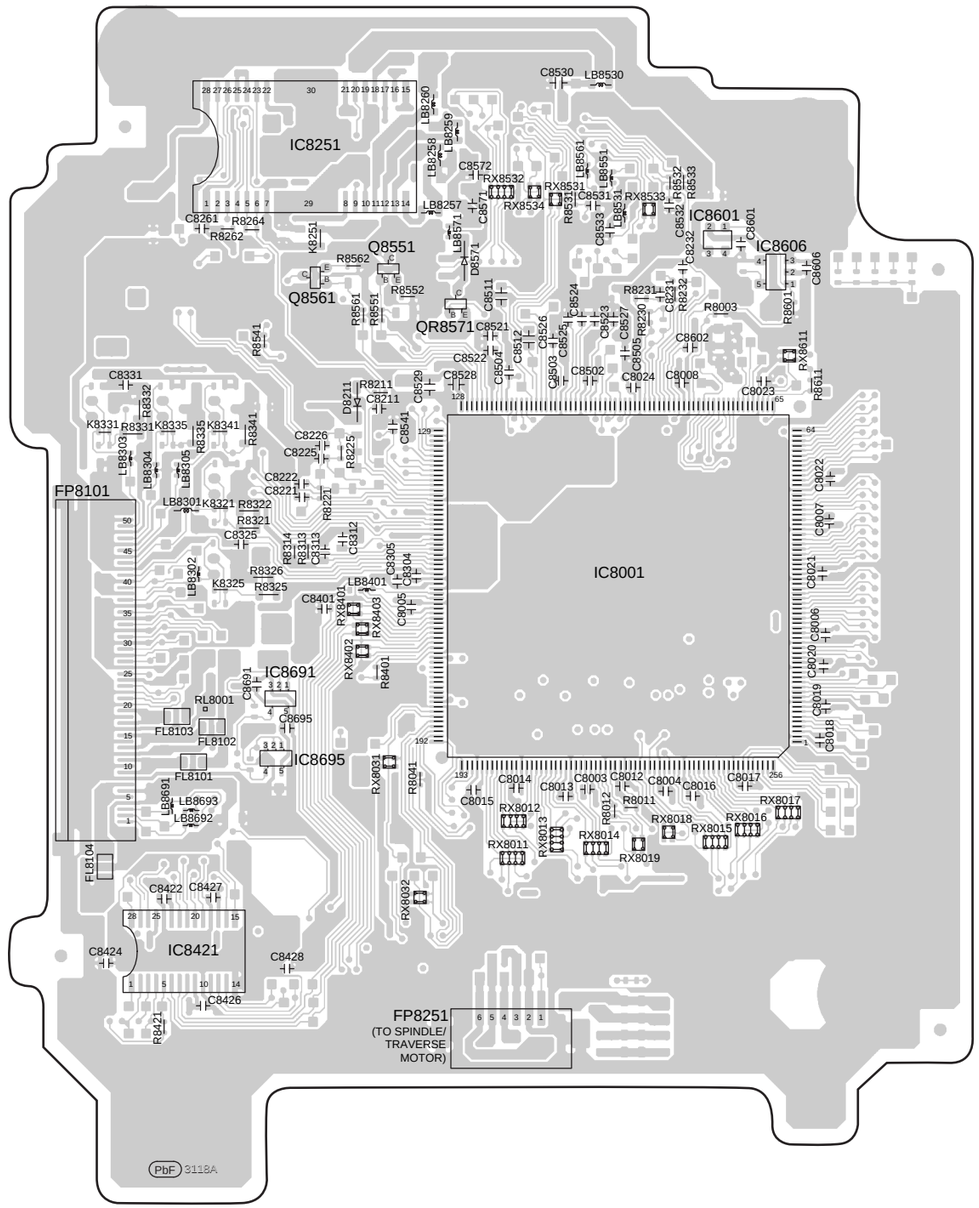
A B C D E F G H I J K L M N

1 2 3 4 5 6 7 8 9

A DVD MODULE P.C.B. (REP4012A)



(SIDE A)



(SIDE B)

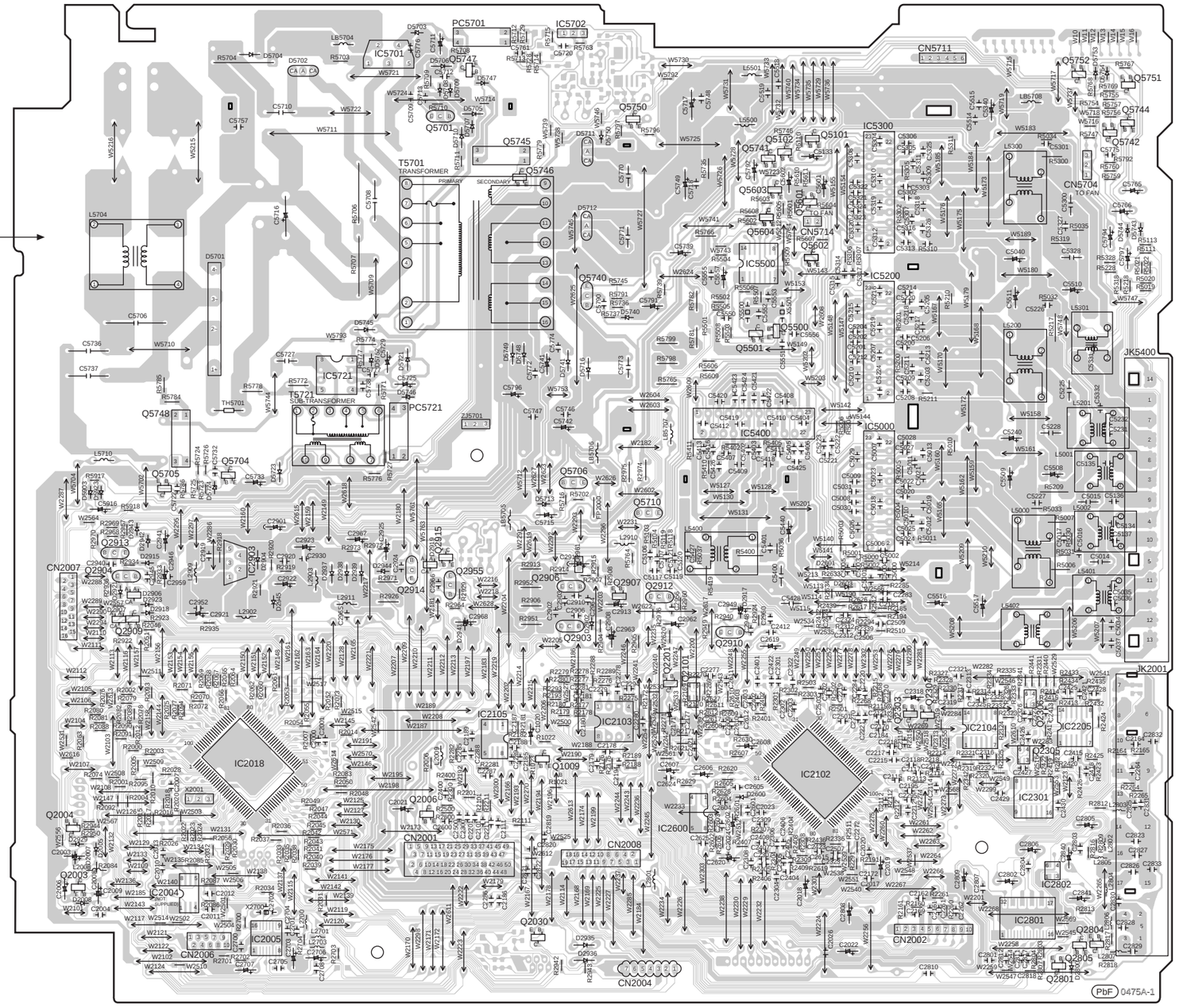
SA-HT990E/EB/EG DVD MODULE P.C.B.

A B C D E F G H I J K L M N

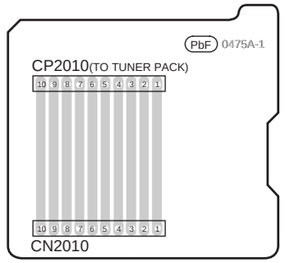
1 2 3 4 5 6 7 8 9

B MAIN/POWER P.C.B. (REPX0535A)

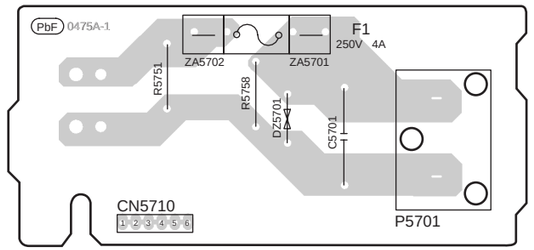
CAUTION
RISK OF ELECTRIC SHOCK
AC VOLTAGE LINE.
PLEASE DO NOT TOUCH THIS P.C.B



C TUNER EXTENT P.C.B. (REPX0535A)

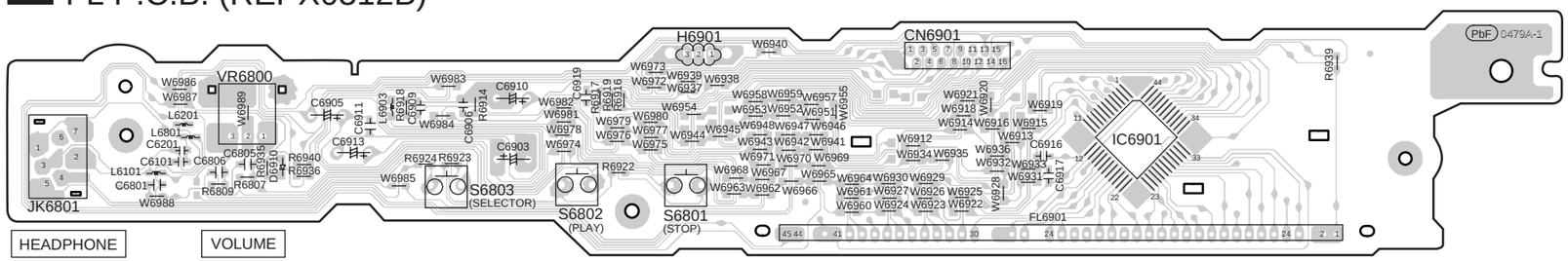


D AC IN-LET P.C.B. (REPX0535A)

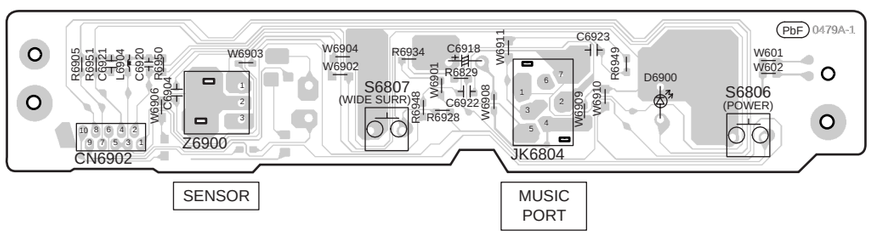


AC IN ~
230V 50HZ...E/EG
230V-240V 50HZ...EB

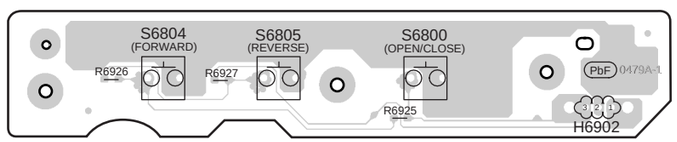
E FL P.C.B. (REPX0512B)



F MUSIC PORT P.C.B. (REPX0512B)



G TOP BUTTON P.C.B. (REPX0512B)

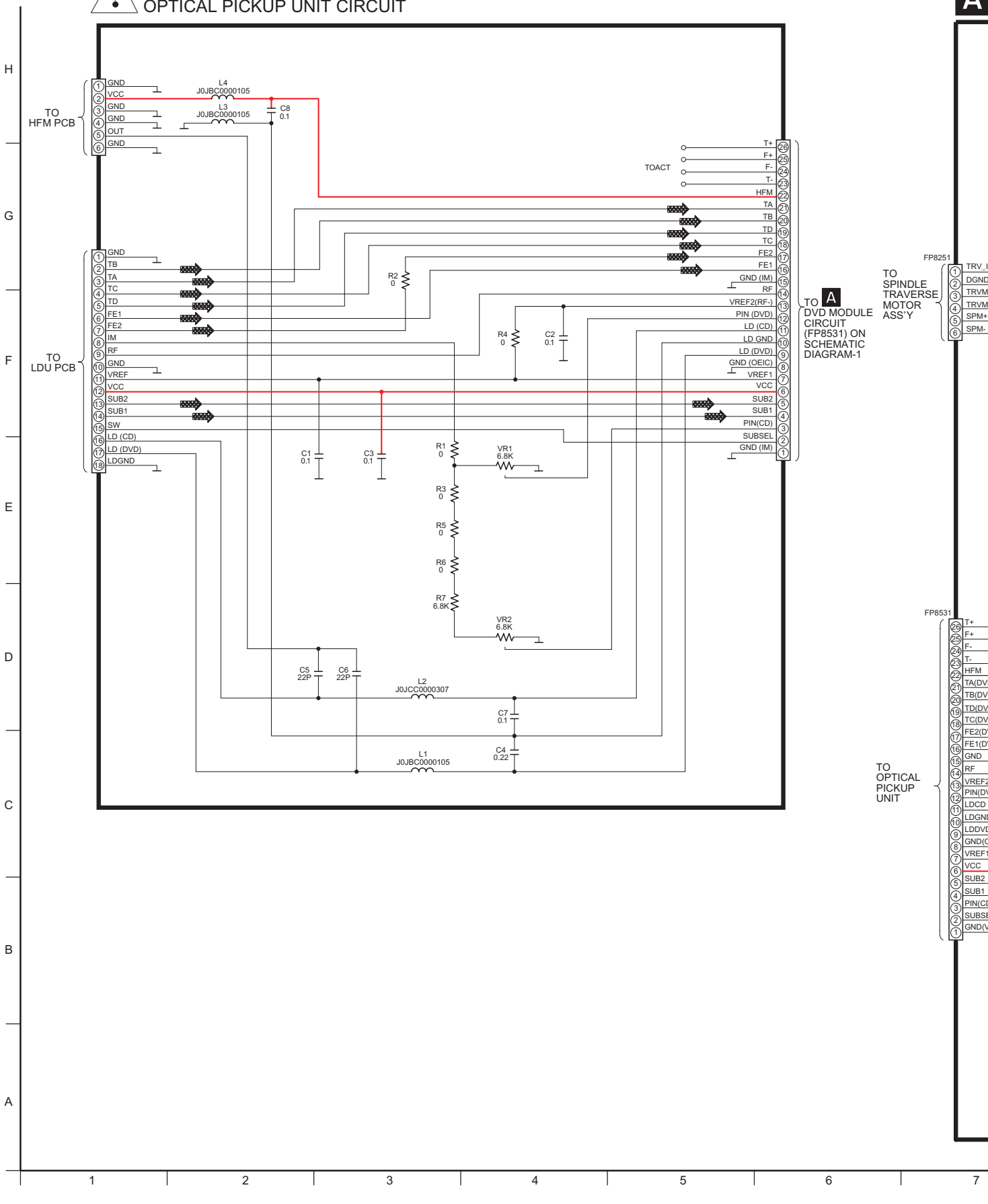


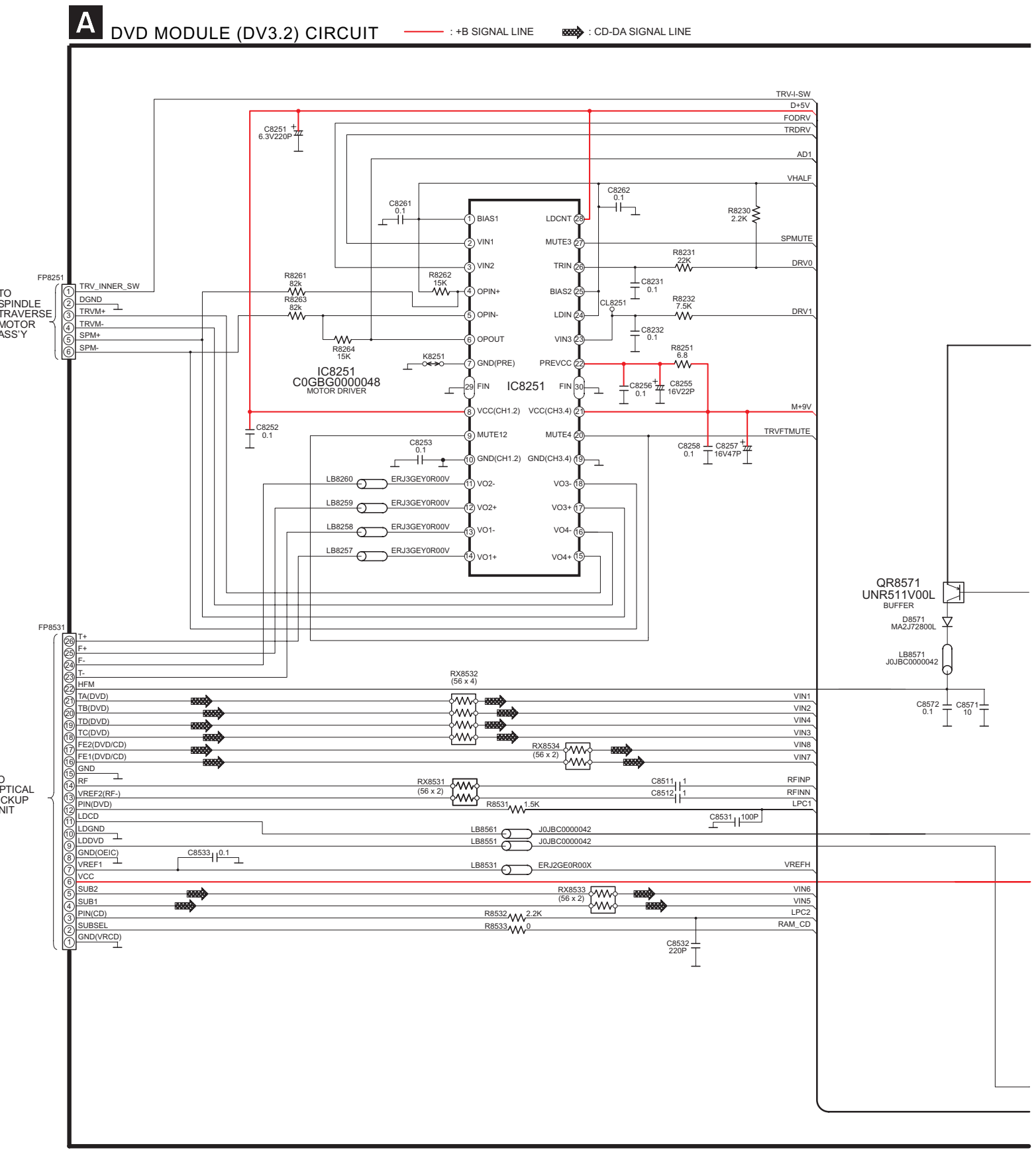
18 Schematic Diagram

18.1. (A) DVD Module (DV3.2) Circuit

SCHEMATIC DIAGRAM-1

OPTICAL PICKUP UNIT CIRCUIT





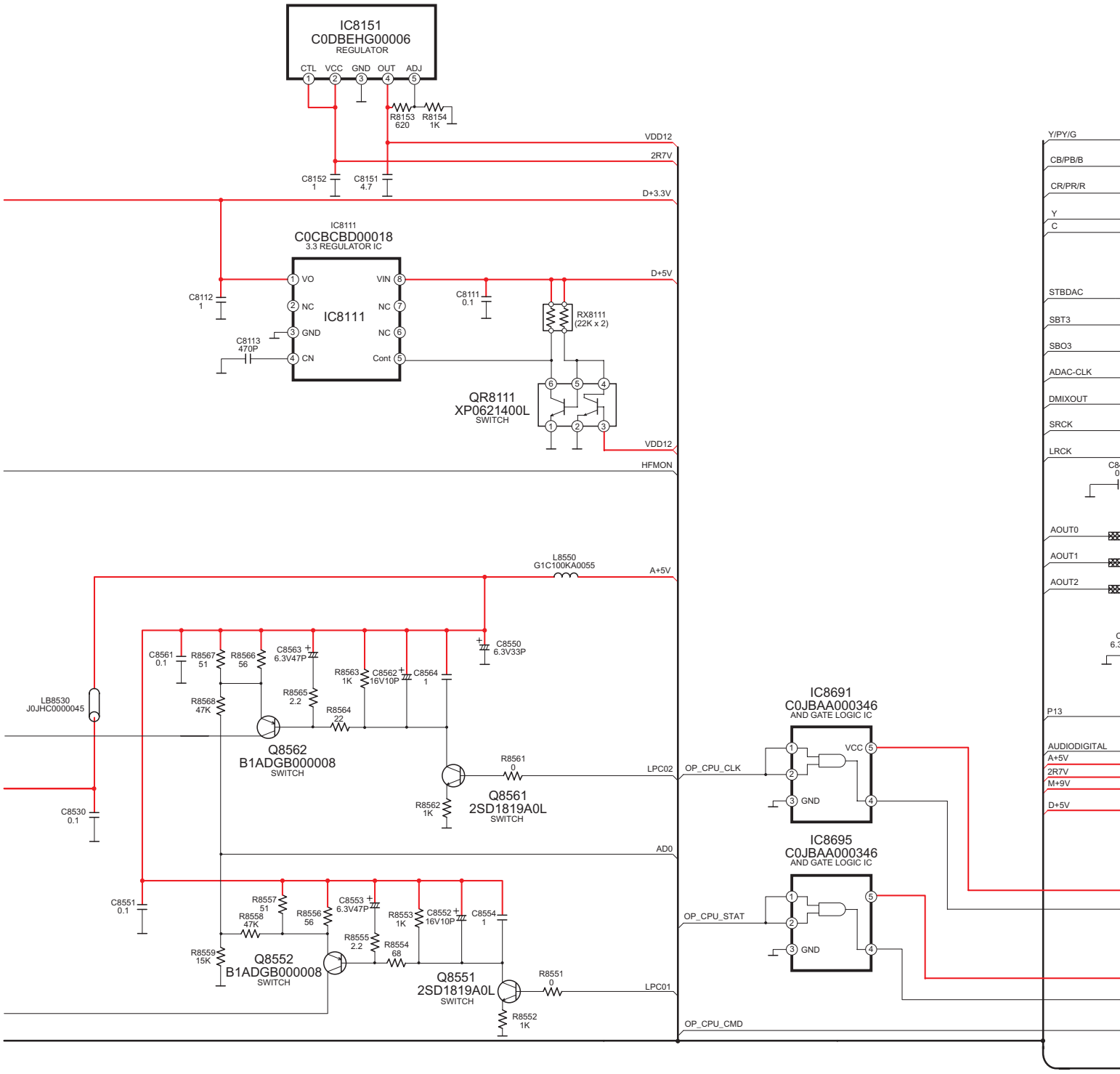
SA-HT990E/EB/EG DVD MODULE (DV3.2)/ OPTICAL PICKUP UNIT CIRCUIT

7 | 8 | 9 | 10 | 11 | 12 | 13

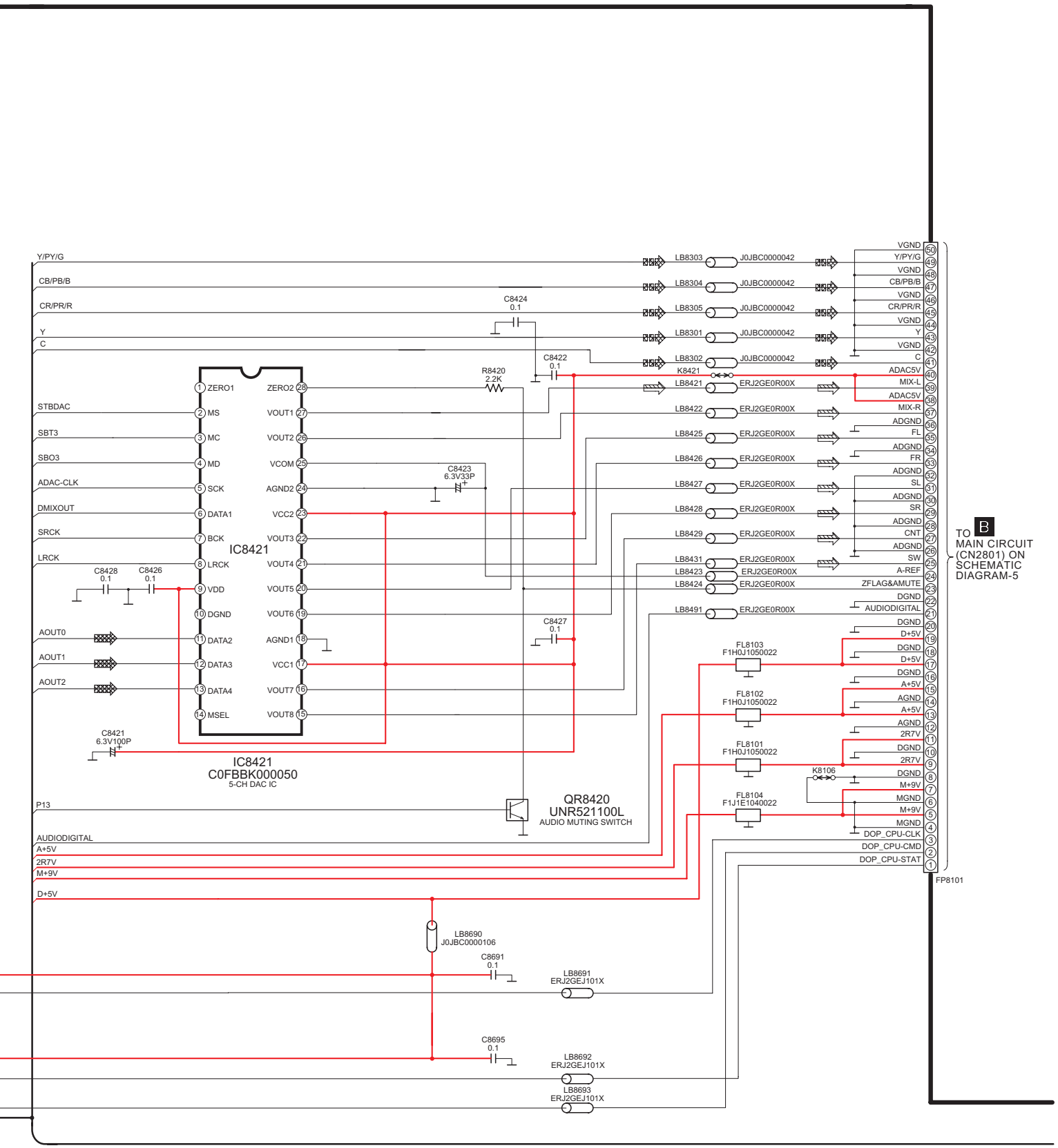
SCHEMATIC DIAGRAM-2

A DVD MODULE (DV3.2) CIRCUIT

: MAIN SIGNAL LINE
: +B SIGNAL LINE
: DVD AUDIO SIGNAL LINE
: DVD VIDEO SIGNAL LINE



14 15 16 17 18 19 20



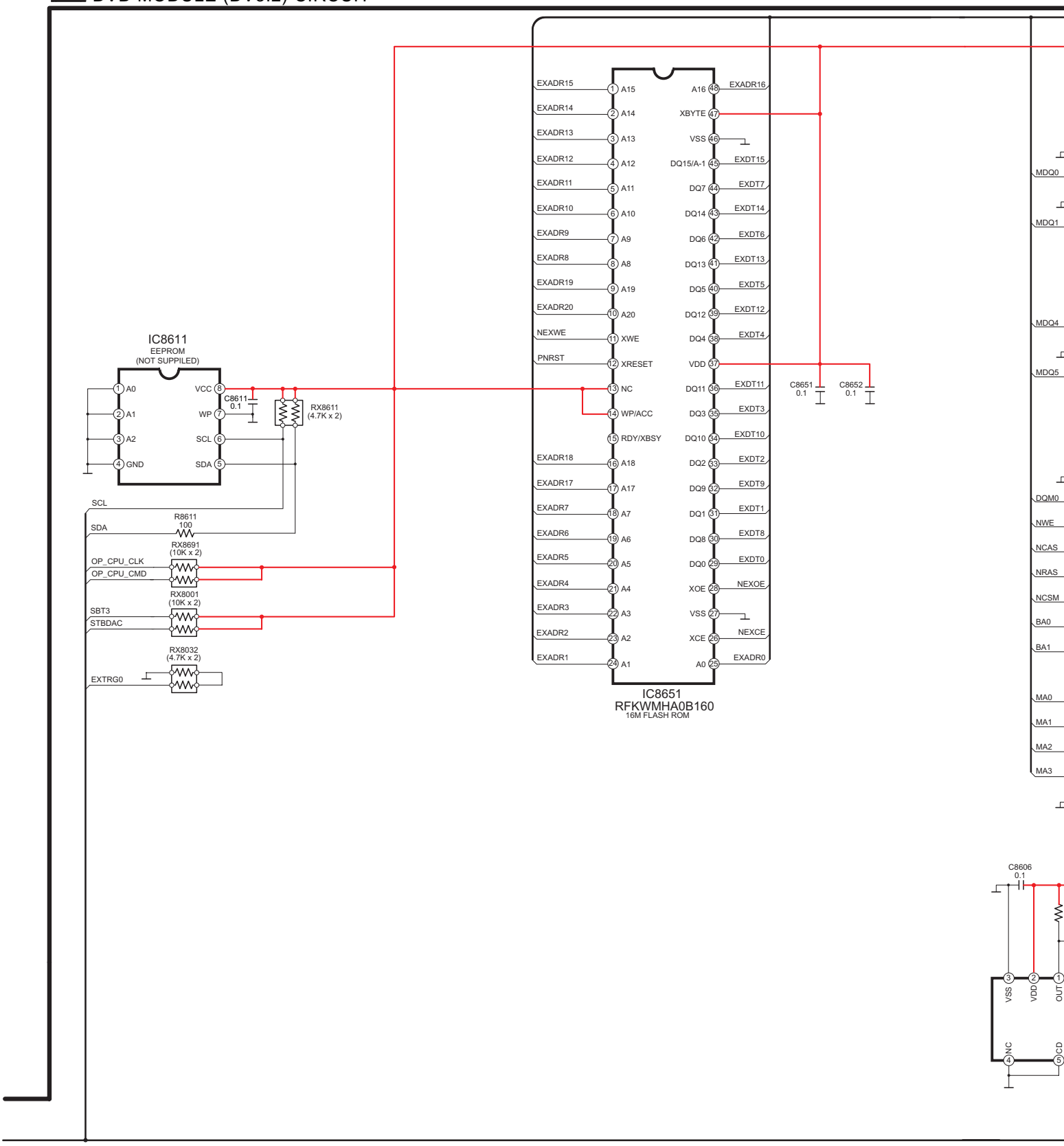
SA-HT990E/EB/EG DVD MODULE (DV3.2) CIRCUIT

20 | 21 | 22 | 23 | 24 | 25 | 26

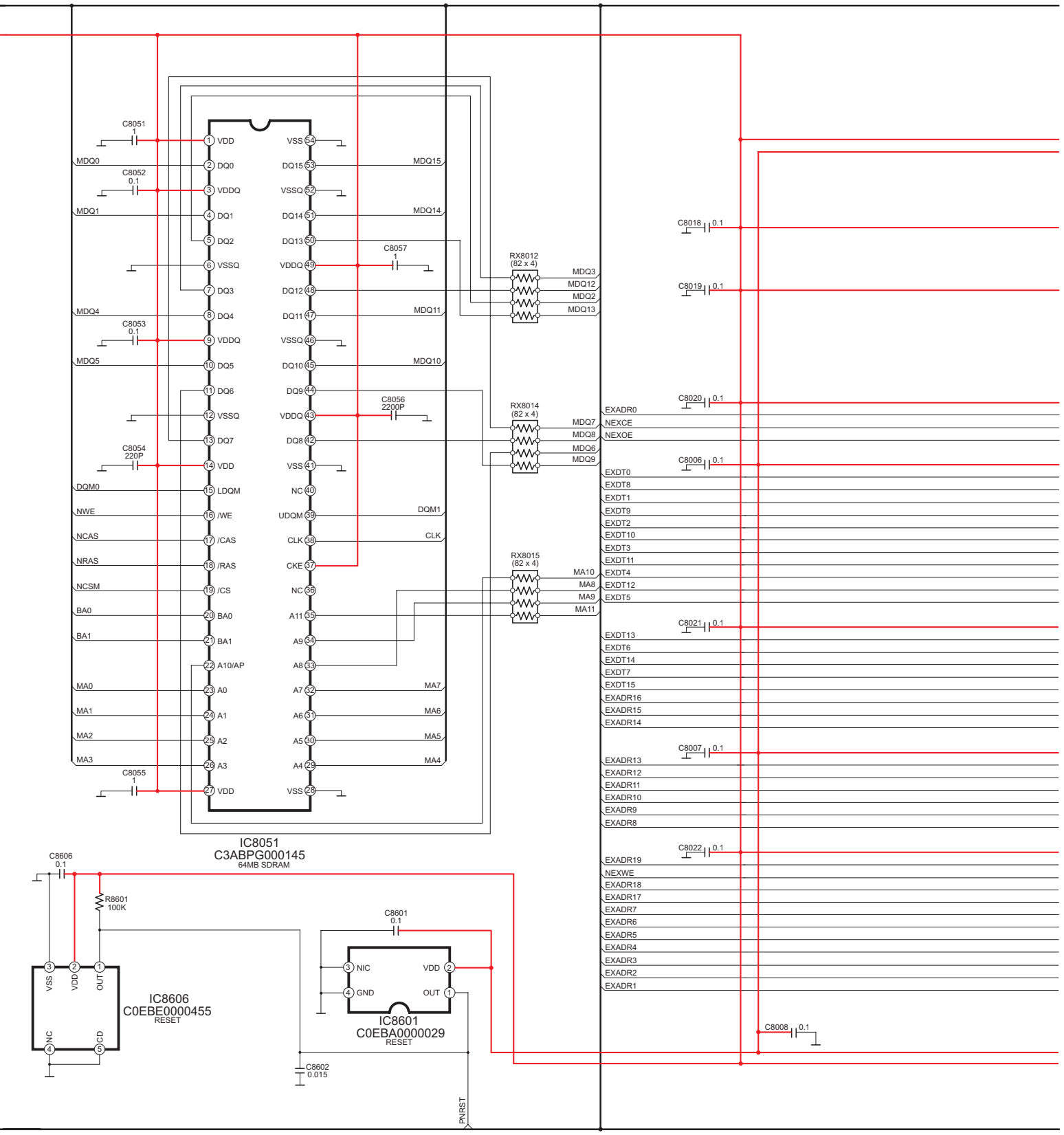
SCHEMATIC DIAGRAM-3

A DVD MODULE (DV3.2) CIRCUIT

: +B SIGNAL LINE



27	28	29	30	31	32	33



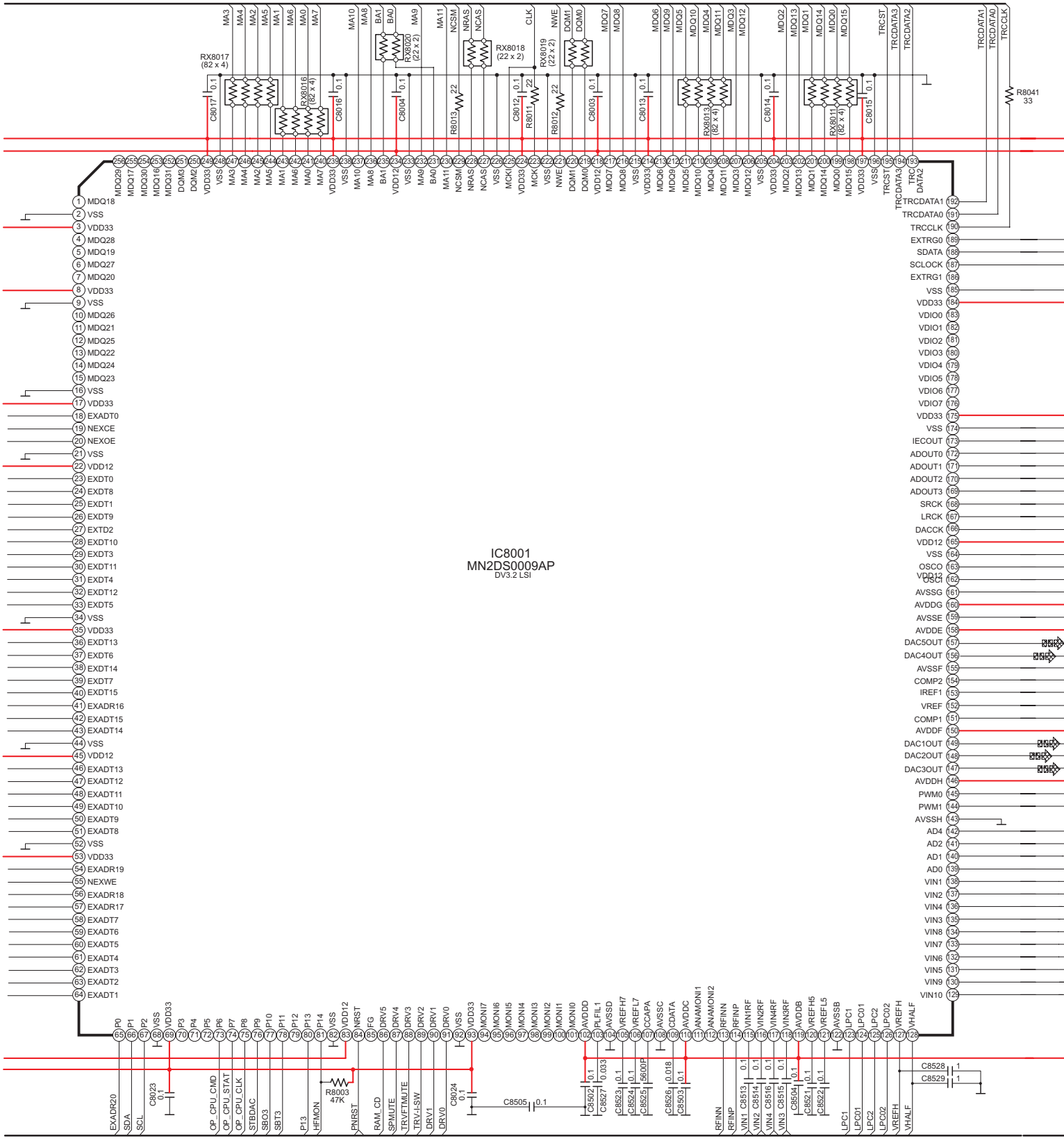
SA-HT990E/EB/EG DVD MODULE (DV3.2) CIRCUIT

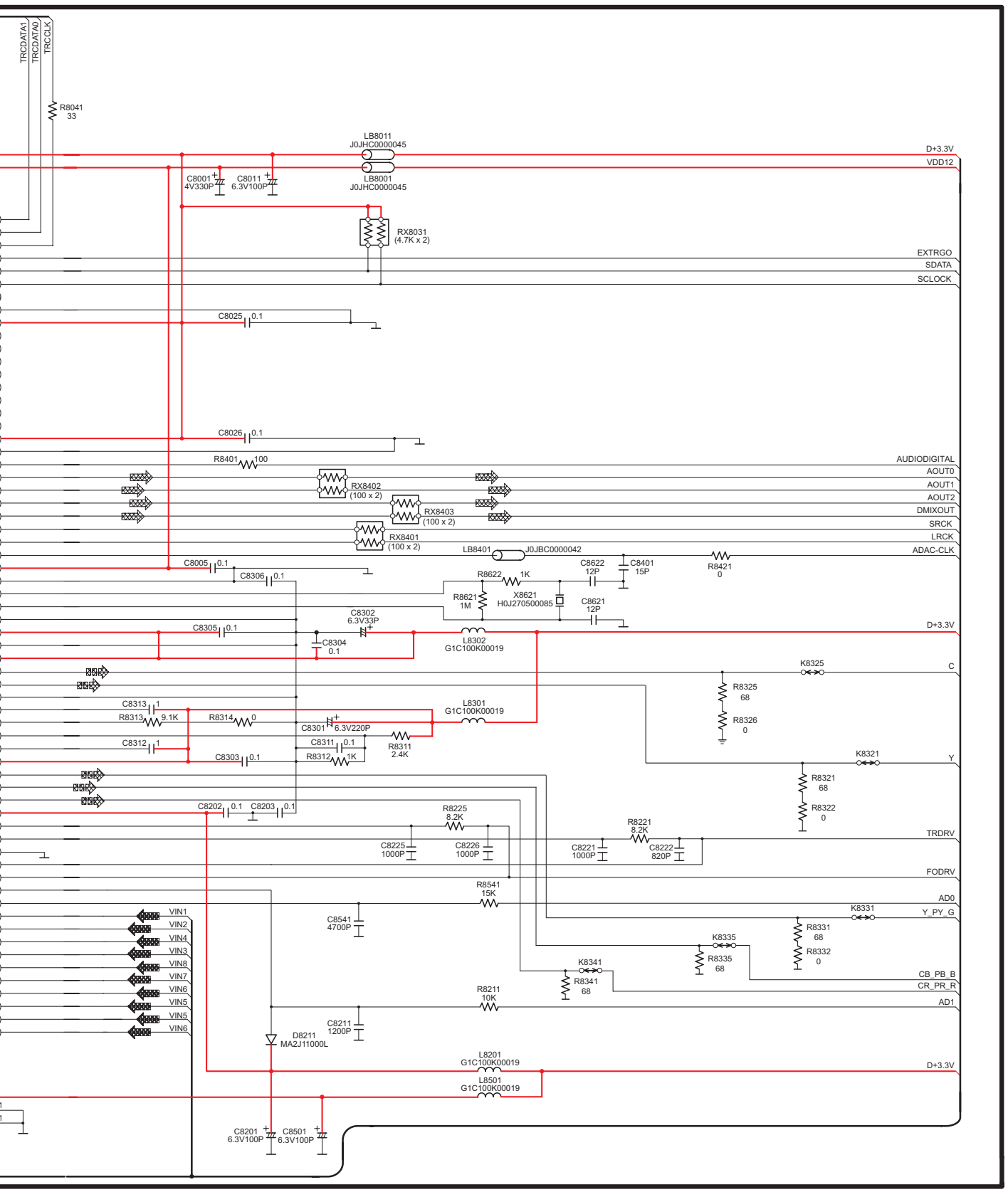
33	34	35	36	37	38	39

SCHEMATIC DIAGRAM-4

A DVD MODULE (DV3.2) CIRCUIT

: CD-DA SIGNAL LINE
: +B SIGNAL LINE
: DVD VIDEO SIGNAL LINE
: DVD AUDIO SIGNAL LINE

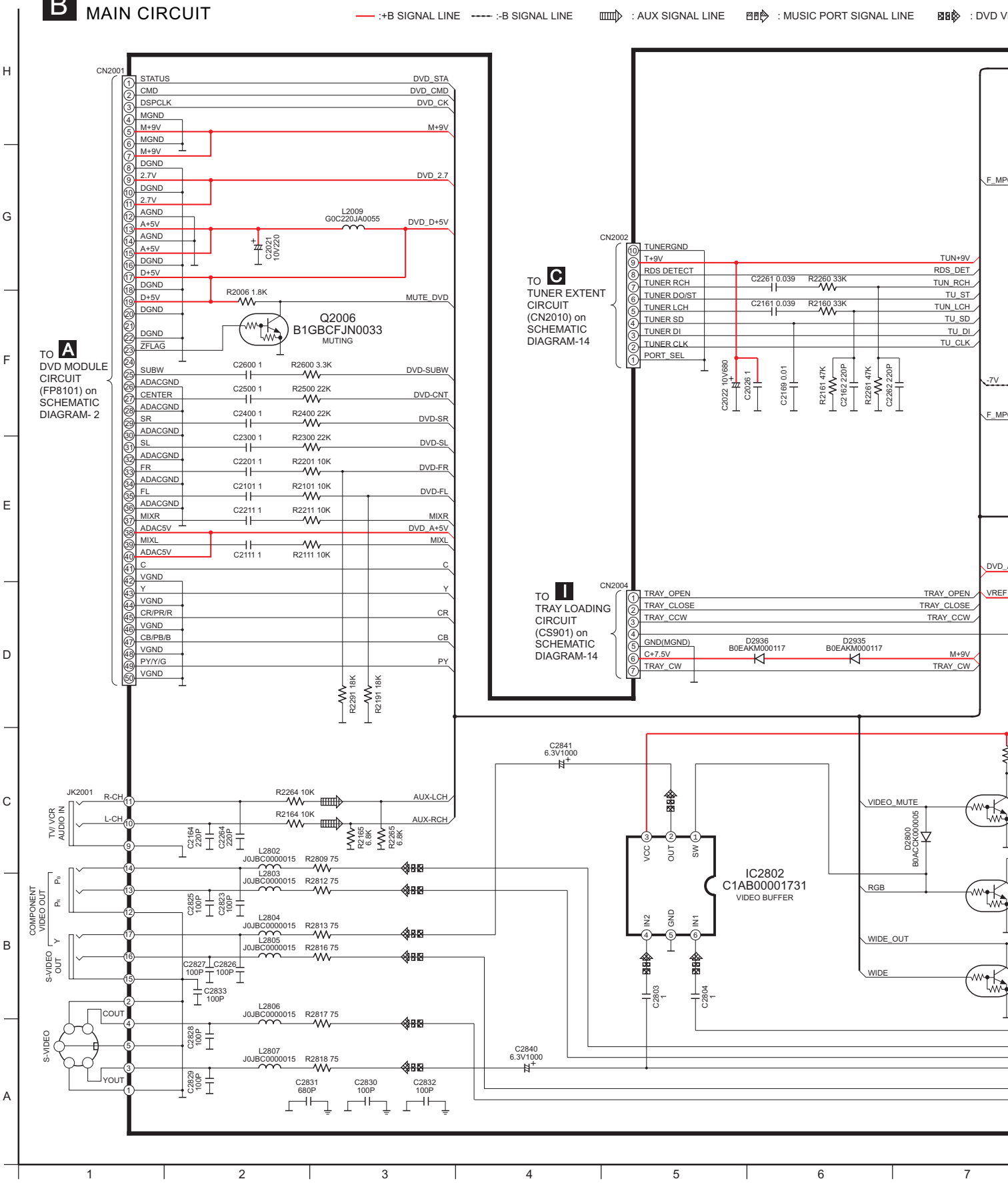




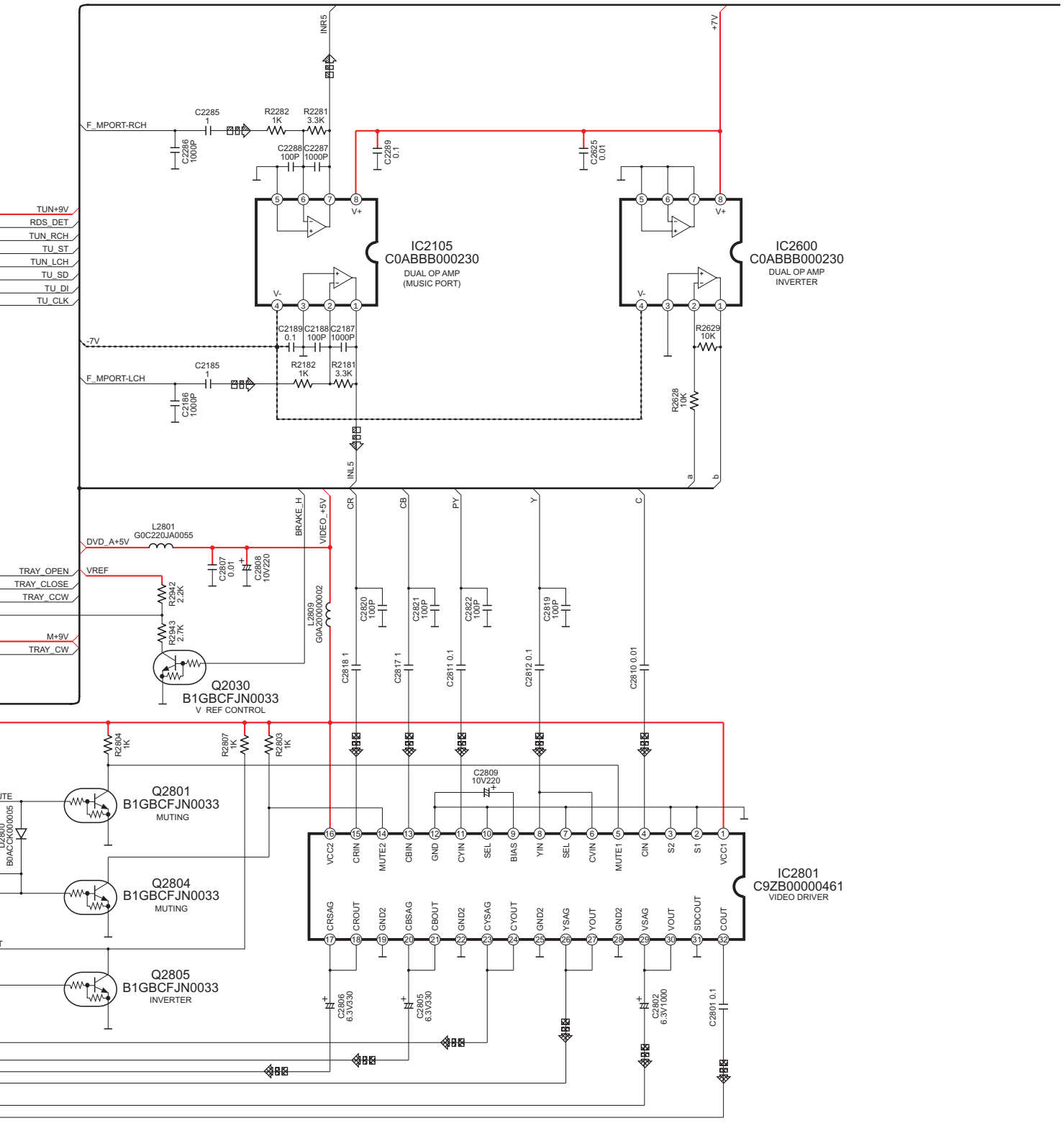
SA-HT990E/EB/EG DVD MODULE (DV3.2) CIRCUIT

18.2. (B) Main/Power Circuit

SCHEMATIC DIAGRAM-5



IE : DVD VIDEO SIGNAL LINE



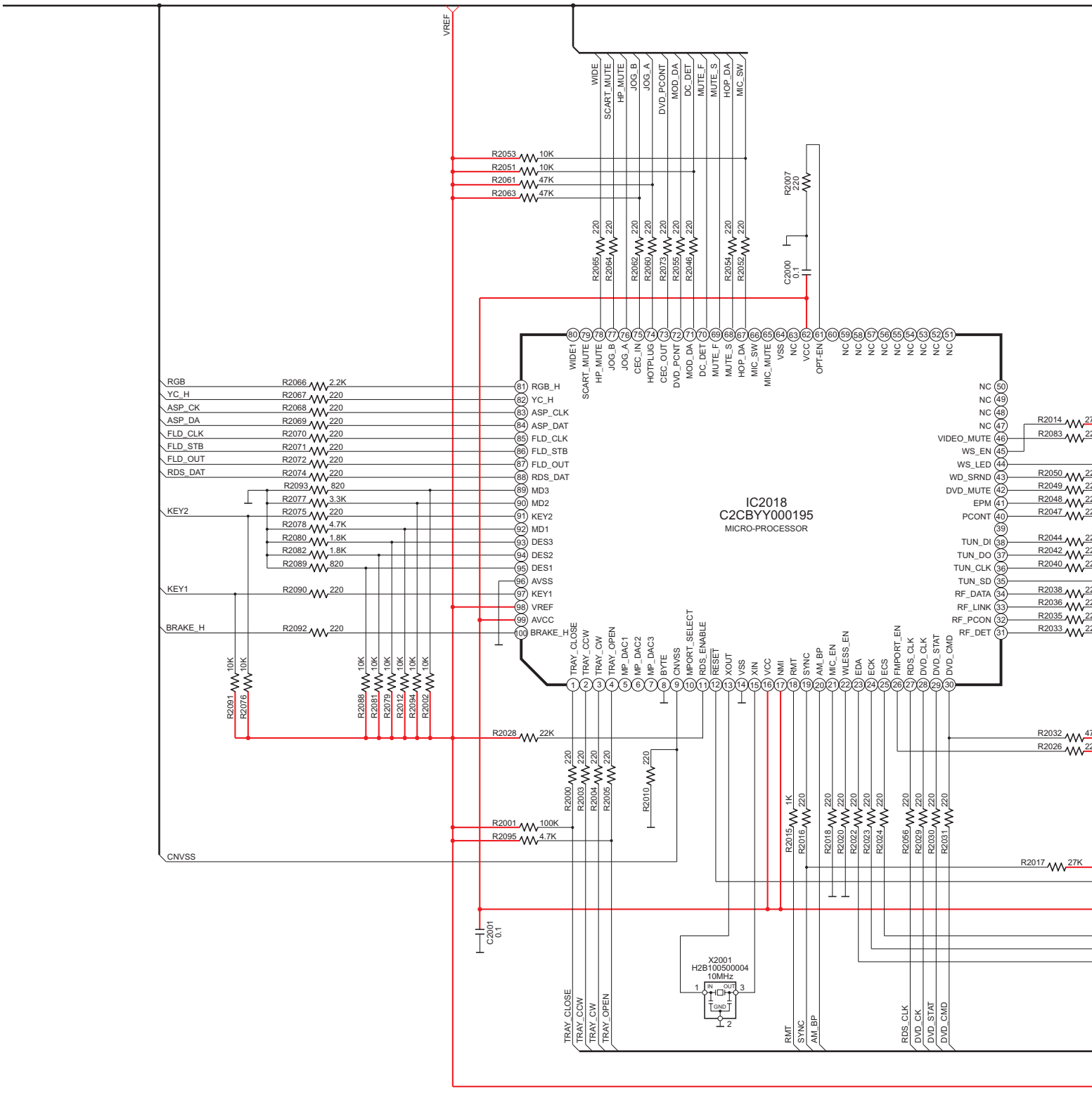
SA-HT990E/EB/EG MAIN CIRCUIT

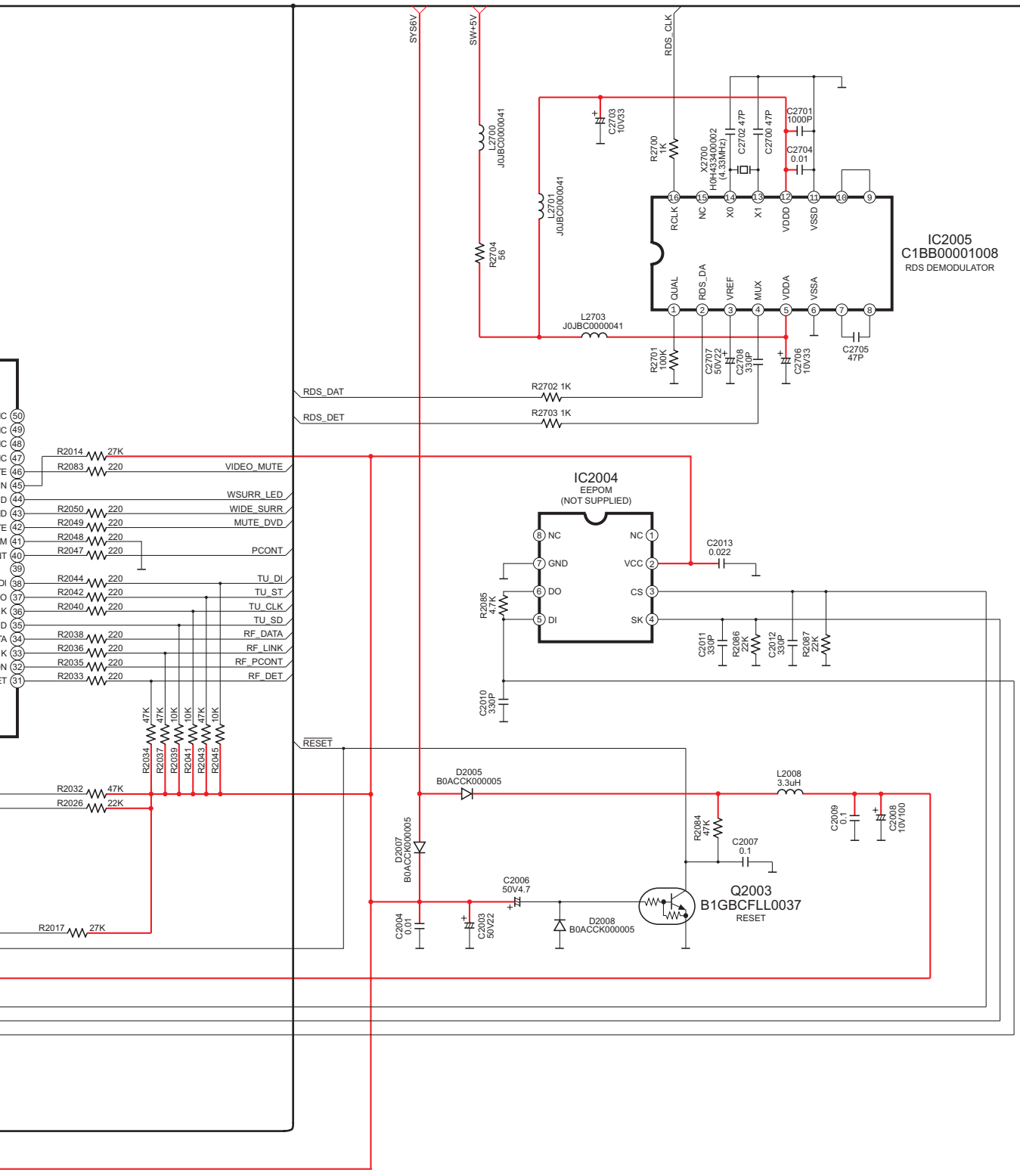
7	8	9	10	11	12	13

SCHEMATIC DIAGRAM-6

B MAIN CIRCUIT

: +B SIGNAL LINE

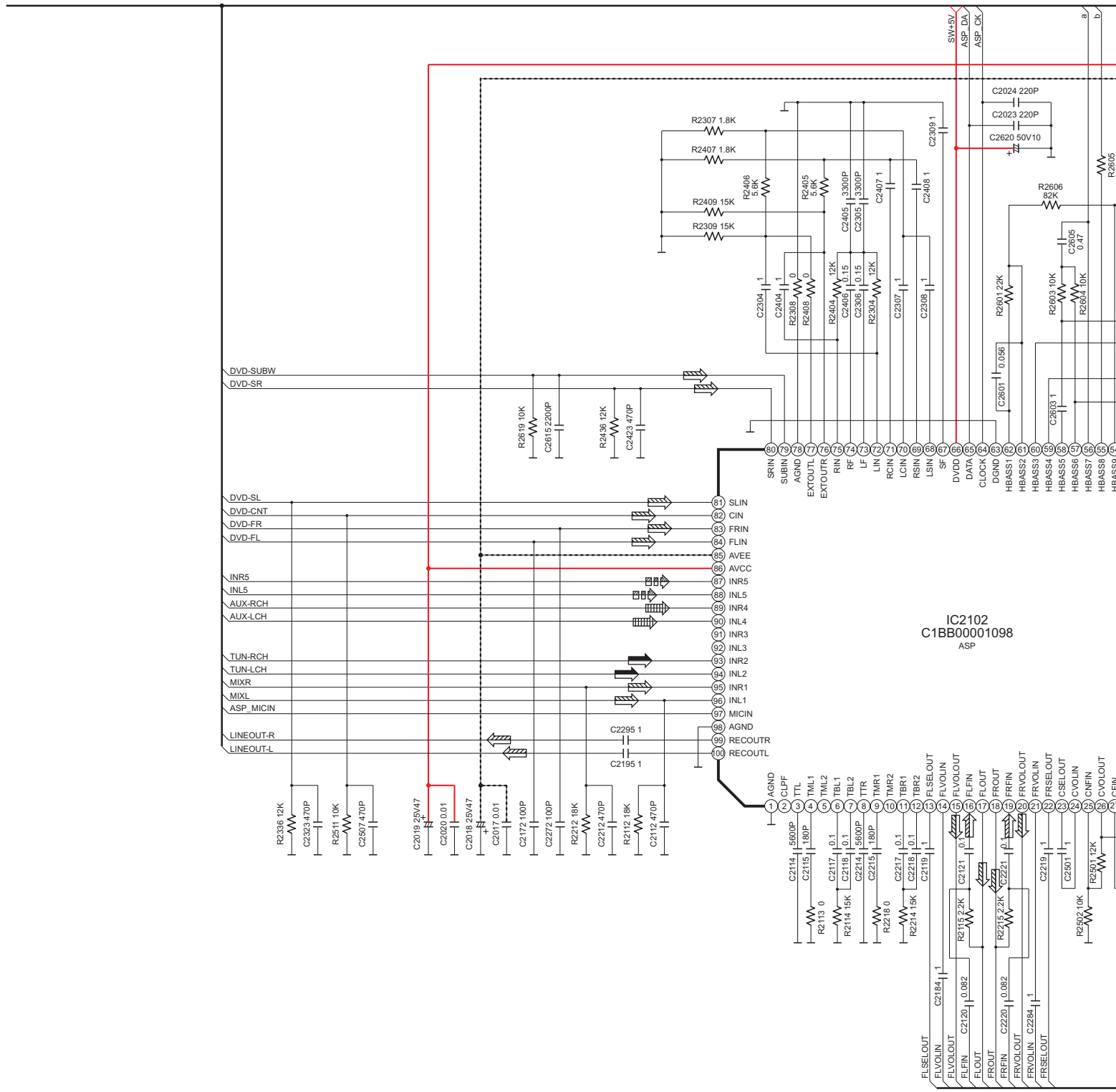



SYS6V
SW+5V
RDS_CLK
L2700
J0JBC0000041
C2703
10V33
R2700
1K
X2700
H0H433400002
(4.33MHz)
C2702 47P
C2700 47P
C2701
1000P
C2704
0.01
L2701
J0JBC0000041
R2704
56
RCLK
NC
XO
X1
VDDD
VSSD
IC2005
C1BB00001008
RDS DEMODULATOR
QUAL
RDS_DA
VREF
MUX
VDDA
VSSA
L2703
J0JBC0000041
C2705
47P
R2701
100K
C2707
50V22
C2708
330P
C2706
10V33
RDS_DAT
R2702 1K
RDS_DET
R2703 1K
IC2004
EEPOM
(NOT SUPPLIED)
NC
GND
DO
DI
VCC
CS
SK
C2013
0.022
R2085
4.7K
C2011
330P
R2086
22K
C2012
330P
R2087
22K
C2010
330P
R2014 27K
R2083 220
VIDEO_MUTE
WSURR_LED
R2050 220
WIDE_SURR
R2049 220
MUTE_DVD
R2048 220
R2047 220
PCONT
R2044 220
TU_DI
R2042 220
TU_ST
R2040 220
TU_CLK
TU_SD
R2038 220
RF_DATA
R2036 220
RF_LINK
R2035 220
RF_PCONT
R2033 220
RF_DET
R2034 47K
R2037 47K
R2039 10K
R2041 10K
R2043 47K
R2045 10K
RESET
R2032 47K
R2026 22K
R2017 27K
D2005
B0ACCK000005
L2008
3.3uH
C2009
0.1
C2008
10V100
R2084
47K
C2007
0.1
D2007
B0ACCK000005
C2006
50V4.7
Q2003
B1GBCFLL0037
RESET
C2004
0.01
C2003
50V22
D2008
B0ACCK000005

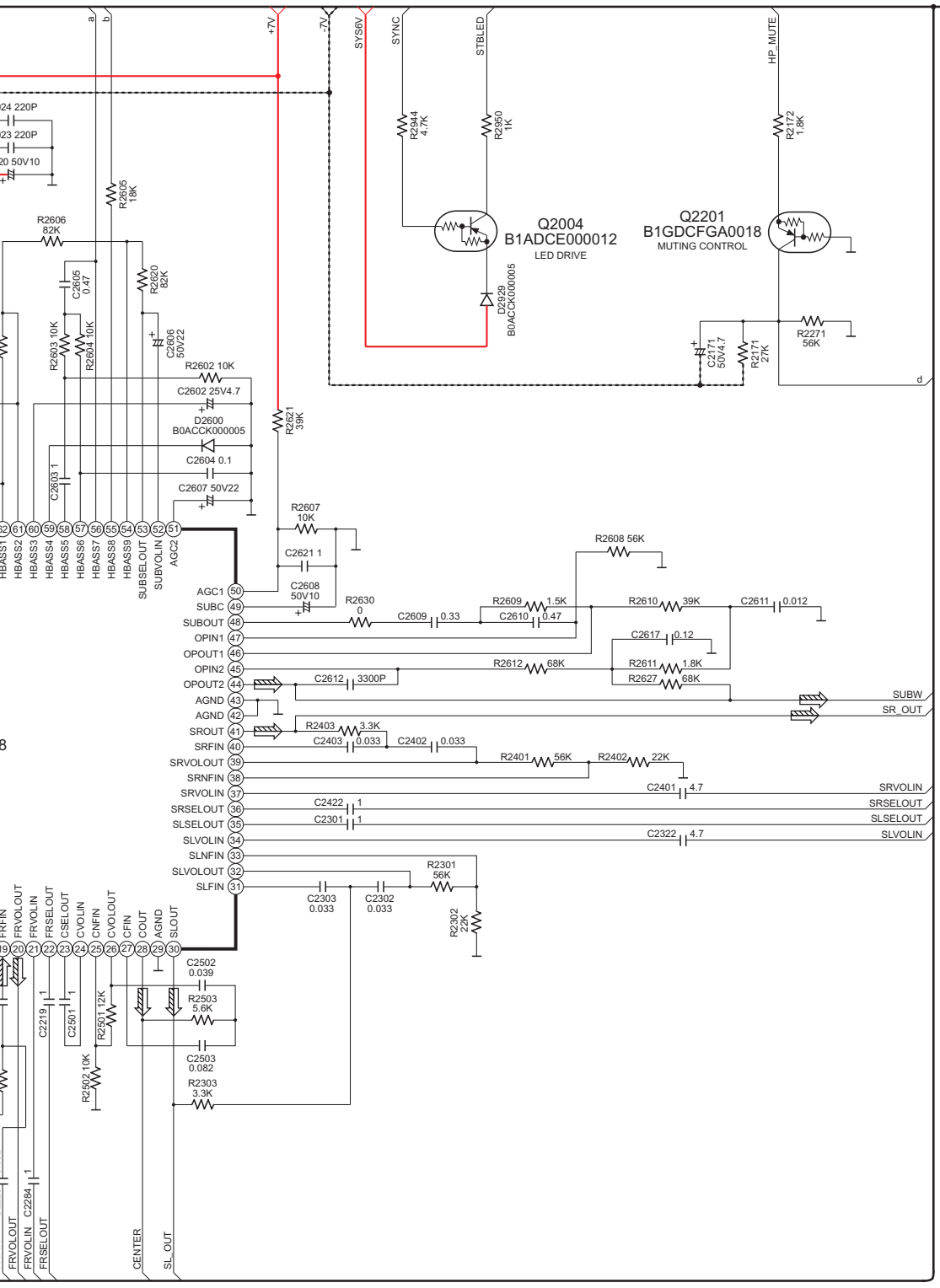
SCHEMATIC DIAGRAM-7

B MAIN CIRCUIT

:+B SIGNAL LINE :-B SIGNAL LINE : MAIN SIGNAL LINE : AUX SIGNAL LINE : FM /AM SIGNAL LINE



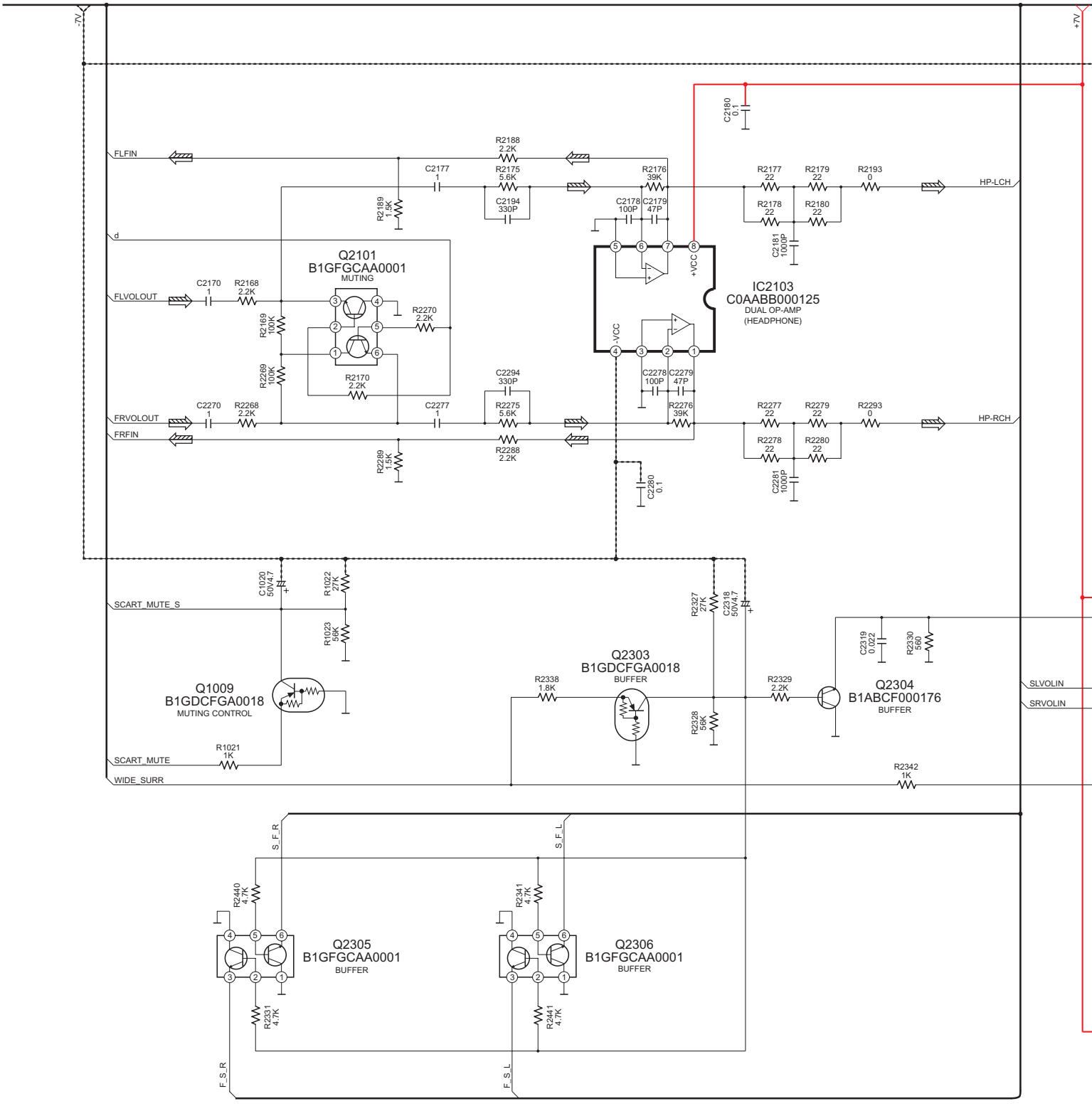
/AM SIGNAL LINE : MUSIC PORT SIGNAL LINE

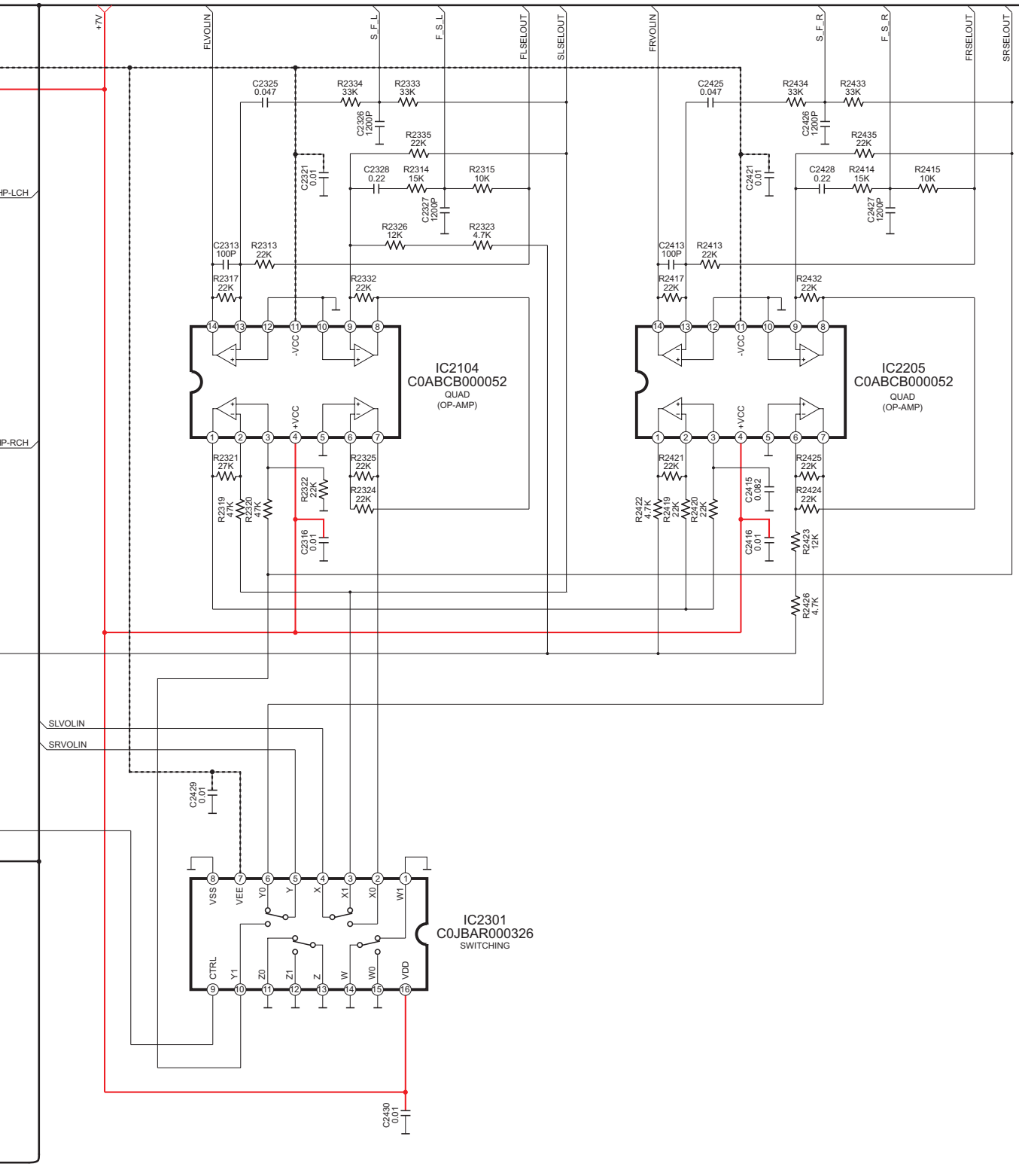


SCHEMATIC DIAGRAM-8

B MAIN CIRCUIT

—— :+B SIGNAL LINE -·-·- :-B SIGNAL LINE ⇨ : MAIN SIGNAL LINE





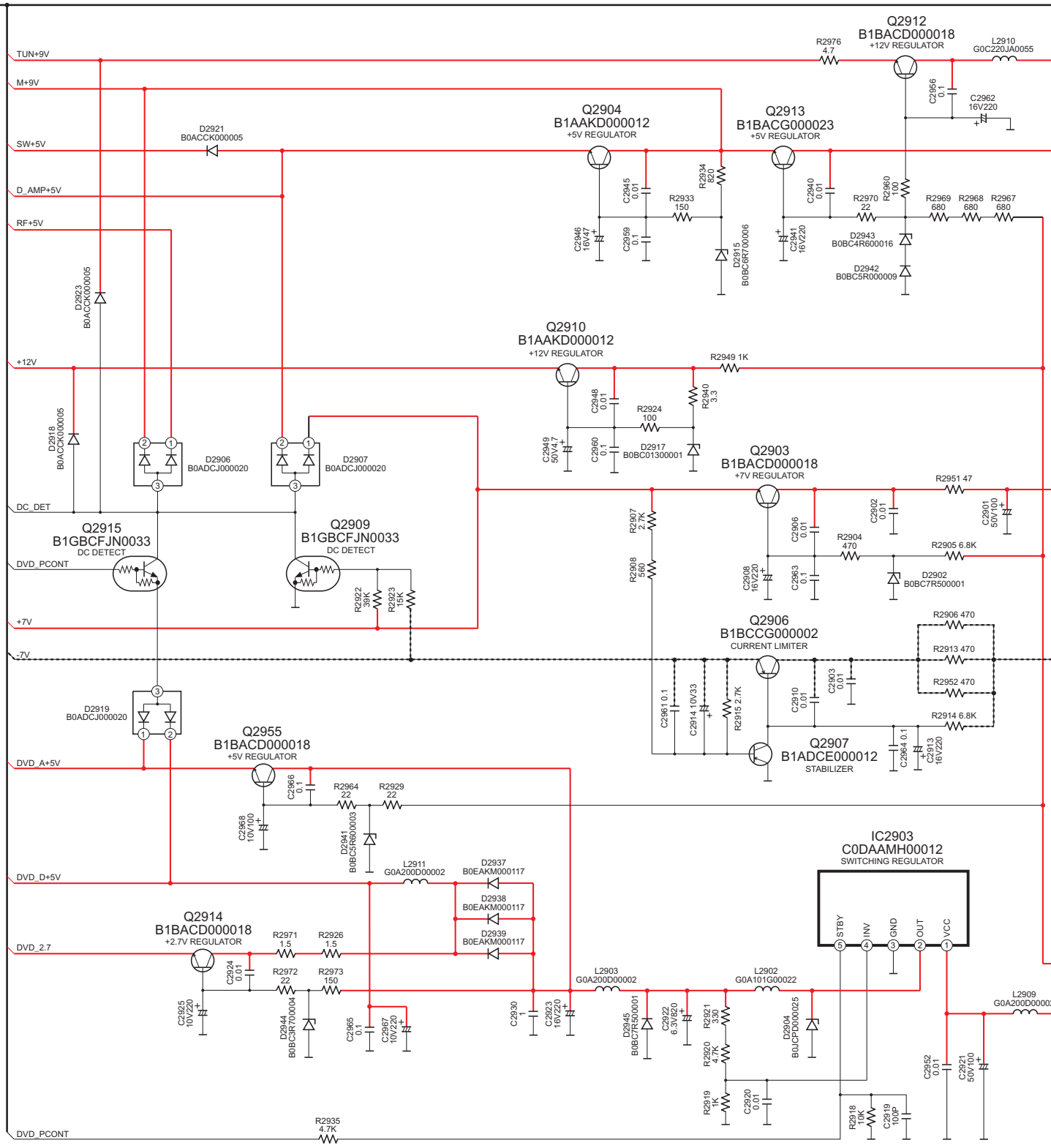
SA-HT990E/EB/EG MAIN CIRCUIT

46	47	48	49	50	51	52

SCHEMATIC DIAGRAM-9

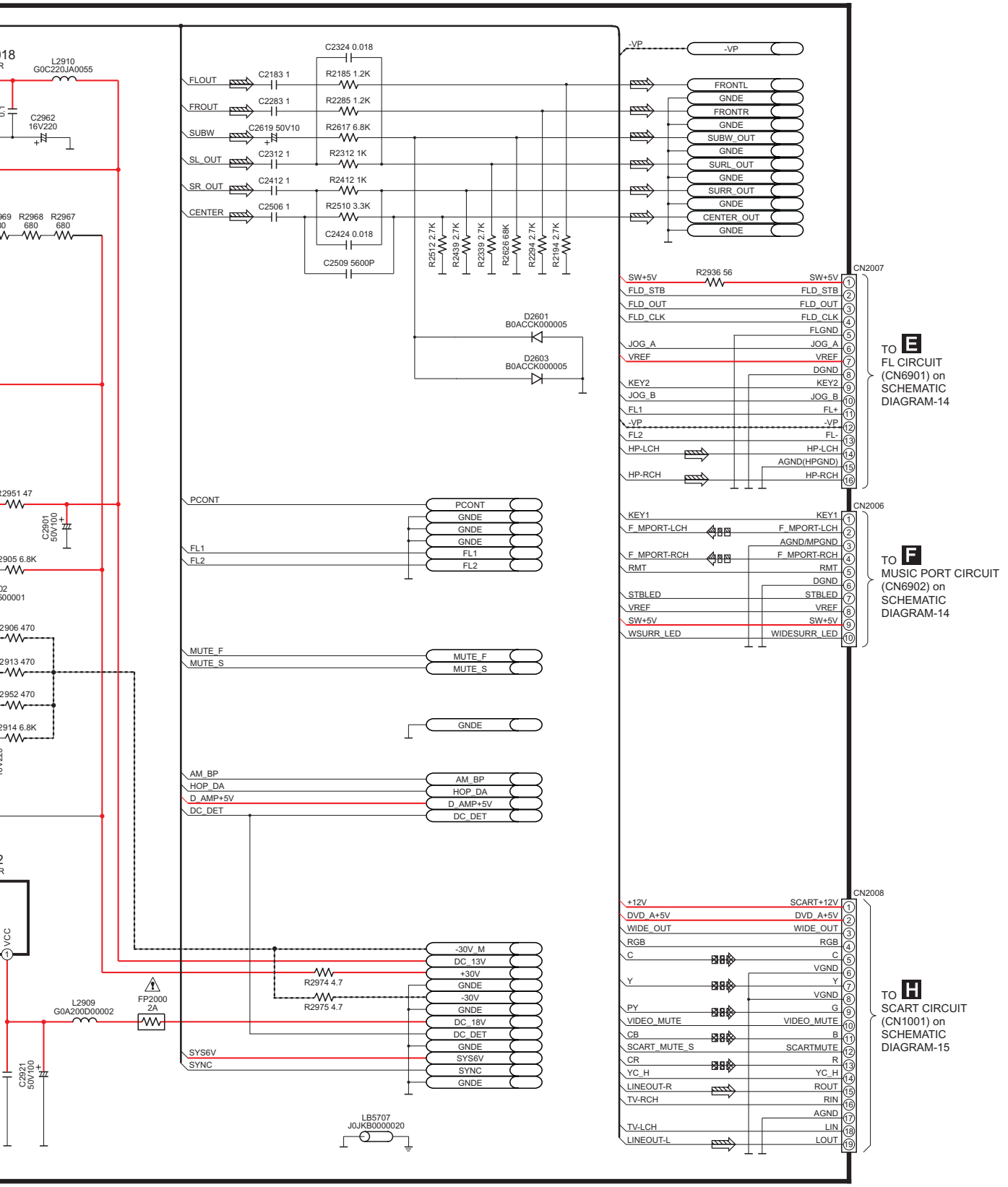
B MAIN CIRCUIT

:+B SIGNAL LINE :-B SIGNAL LINE : MAIN SIGNAL LINE : MUSIC PORT SIGNAL LINE : DVD VIDEO SIGNAL LINE



53	54	55	56	57	58	59

D VIDEO SIGNAL LINE



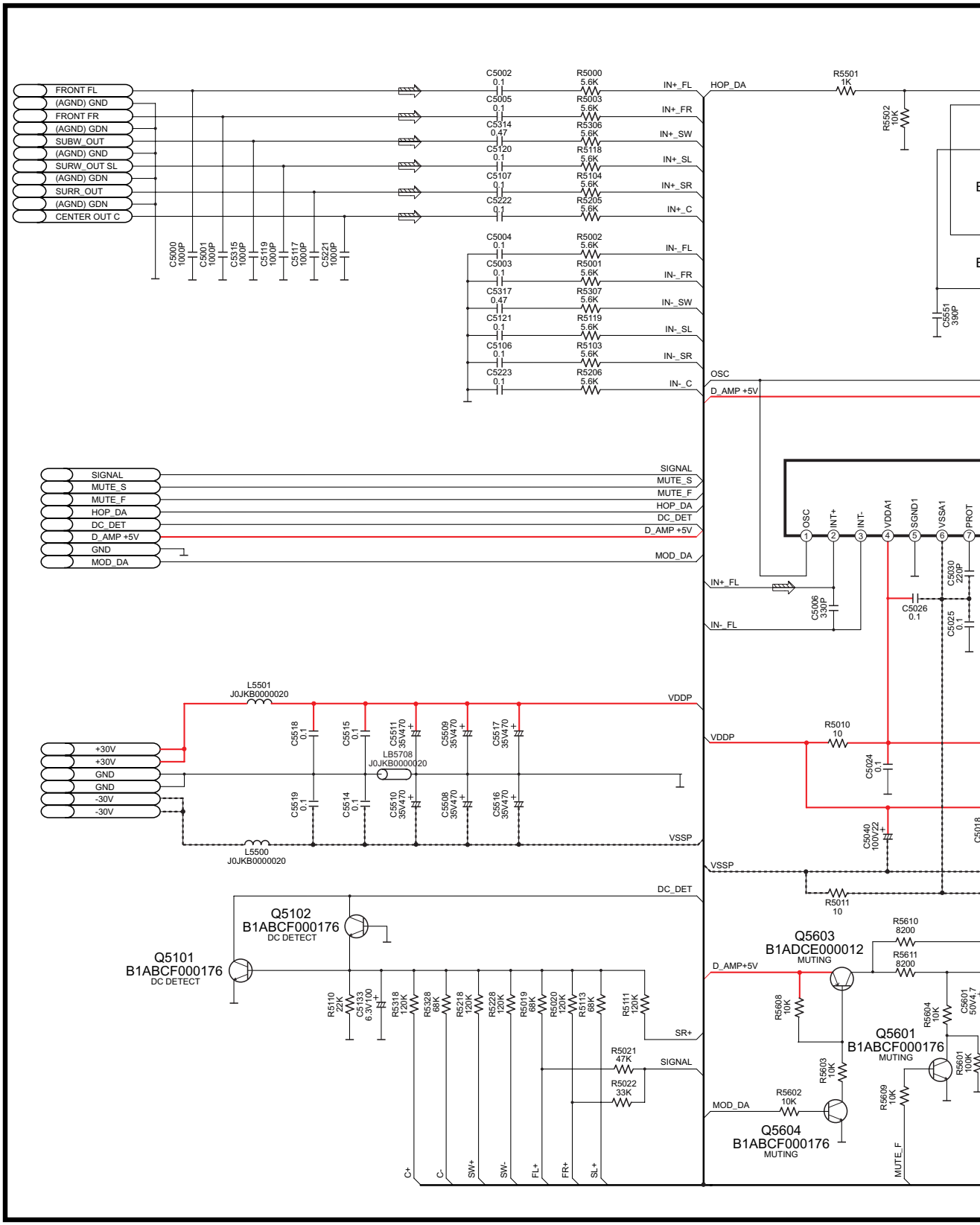
SA-HT990E/EB/EG MAIN CIRCUIT

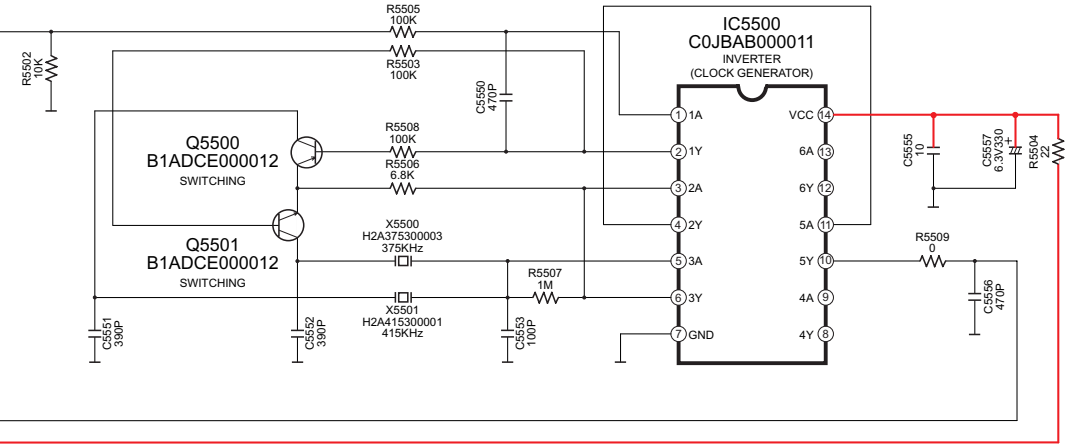
59 | 60 | 61 | 62 | 63 | 64 | 65

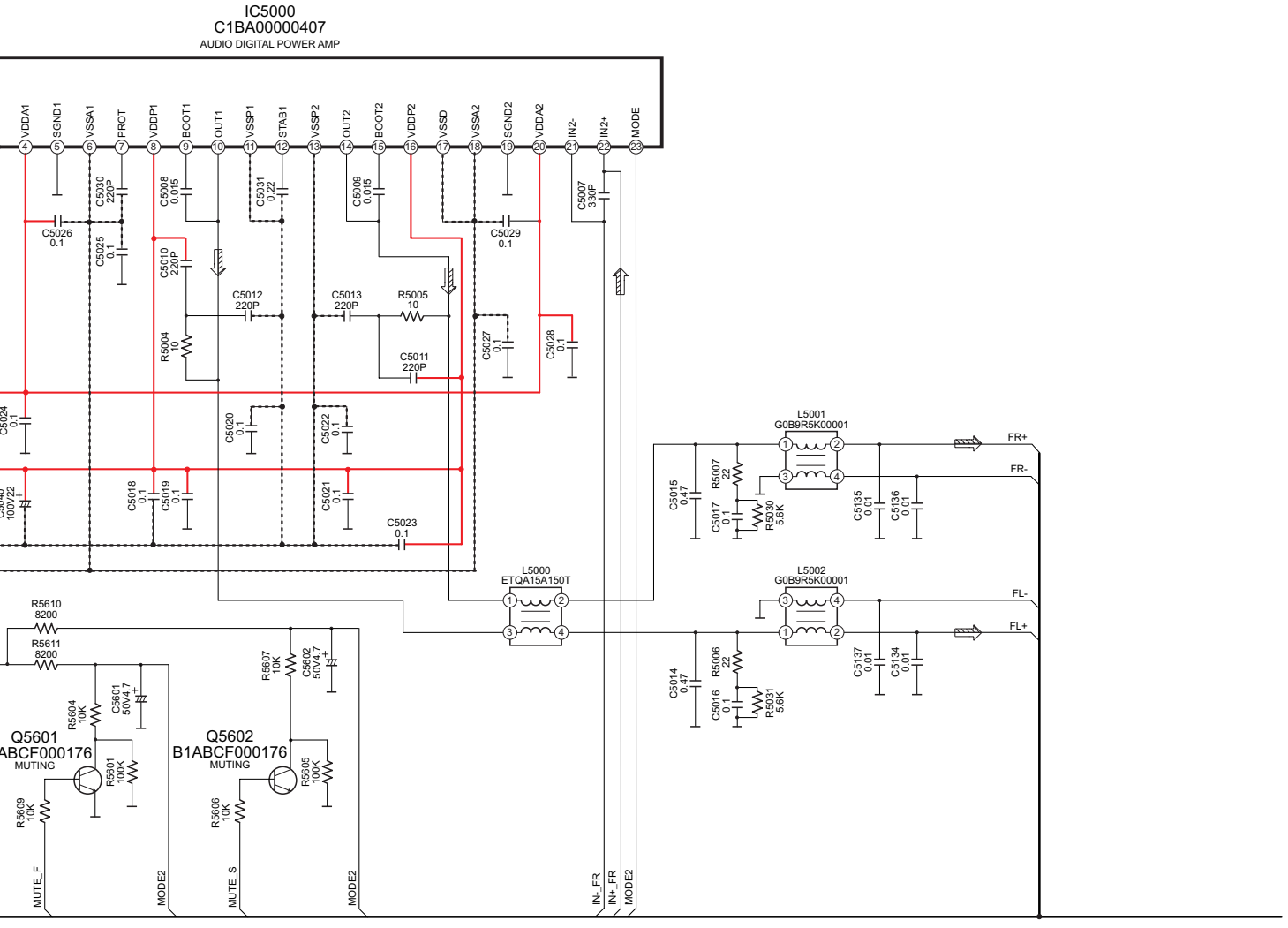
SCHEMATIC DIAGRAM-10

B POWER(DIGITAL AMP) CIRCUIT

:MAIN SIGNAL LINE :+B SIGNAL LINE :-B SIGNAL LINE



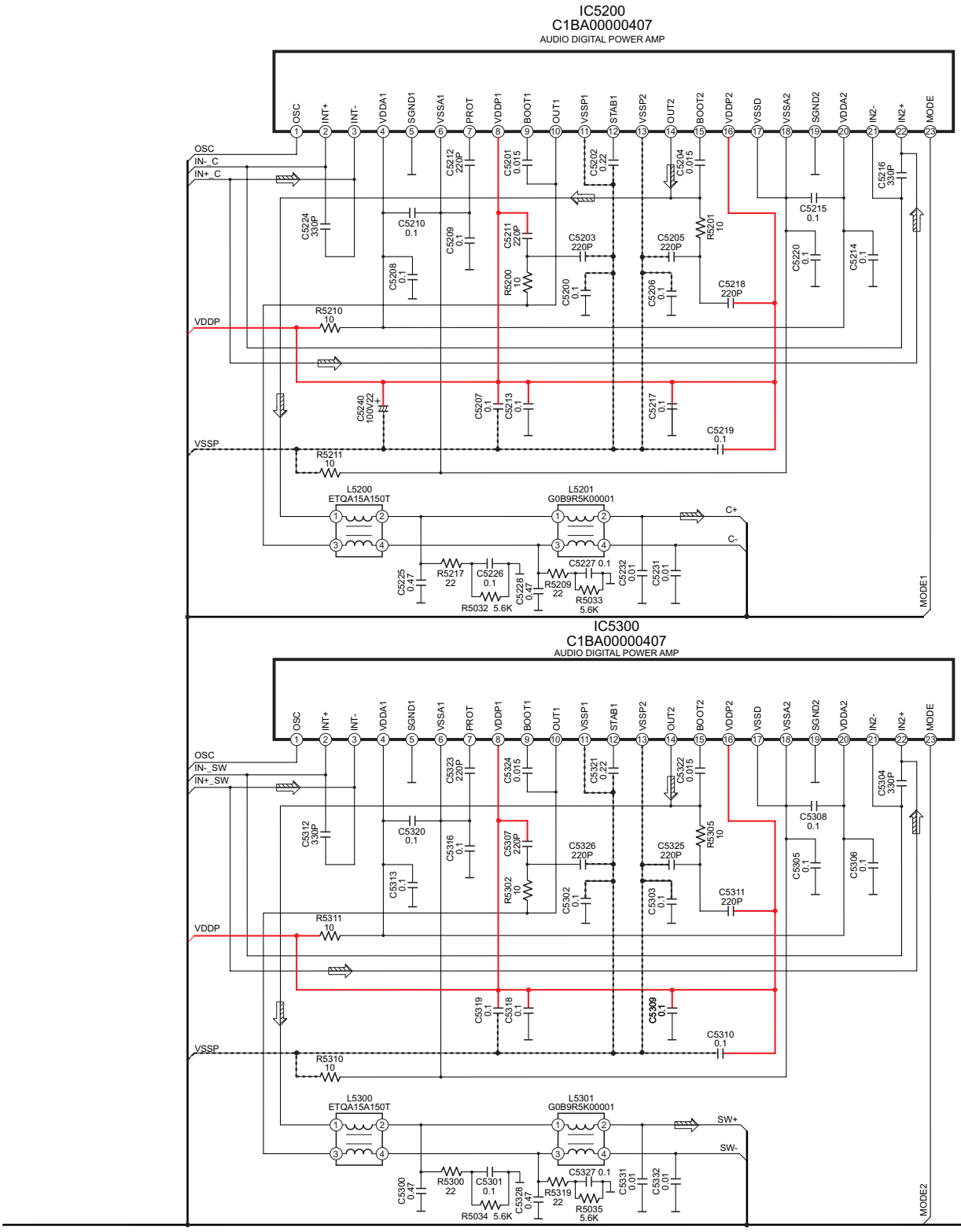

IC5500
C0JBAB000011
INVERTER
(CLOCK GENERATOR)
Q5500
B1ADCE000012
SWITCHING
Q5501
B1ADCE000012
SWITCHING
X5500
H2A375300003
375KHz
X5501
H2A415300001
415KHz
R5502 10K
R5503 100K
R5505 100K
R5506 6.8K
R5507 1M
R5508 100K
R5509 0
R5504 22
C5550 470P
C5551 390P
C5552 390P
C5553 100P
C5555 10
C5556 470P
C5557 6.3V330
1A
1Y
2A
2Y
3A
3Y
GND
VCC
6A
6Y
5A
5Y
4A
4Y


IC5000
C1BA00000407
AUDIO DIGITAL POWER AMP
VDDA1
SGND1
VSSA1
PROT
VDDP1
BOOT1
OUT1
VSSP1
STAB1
VSSP2
OUT2
BOOT2
VDDP2
VSSD
VSSA2
SGND2
VDDA2
IN2-
IN2+
MODE
L5000
ETQA15A150T
L5001
G0B9R5K00001
L5002
G0B9R5K00001
FR+
FR-
FL-
FL+
Q5601
B1ABCF000176
MUTING
Q5602
B1ABCF000176
MUTING
MUTE_F
MUTE_S
MODE2
IN-_FR
IN+_FR

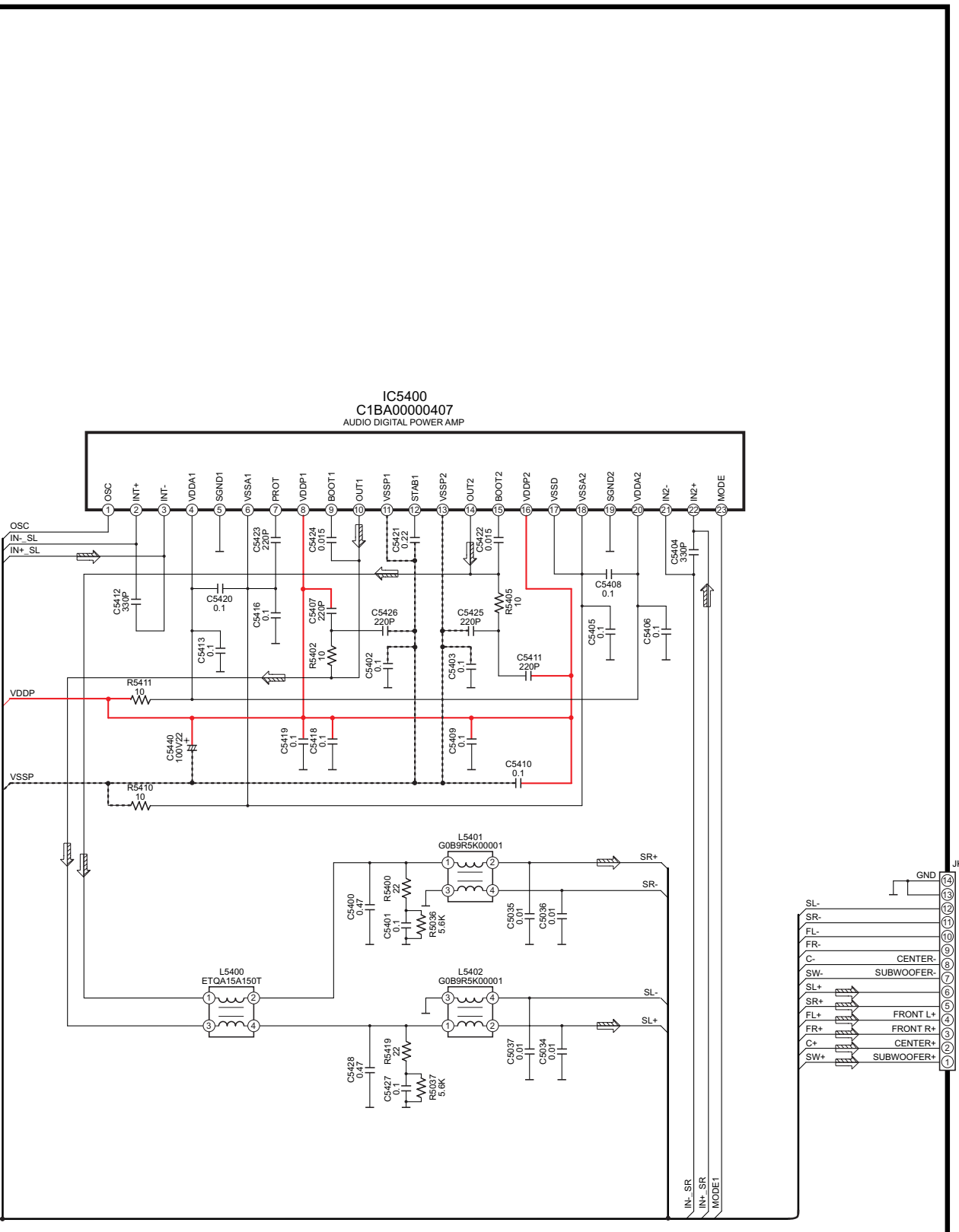
SCHEMATIC DIAGRAM-11

B POWER(DIGITAL AMP) CIRCUIT

:MAIN SIGNAL LINE :+B SIGNAL LINE :-B SIGNAL LINE



14	15	16	17	18	19	20

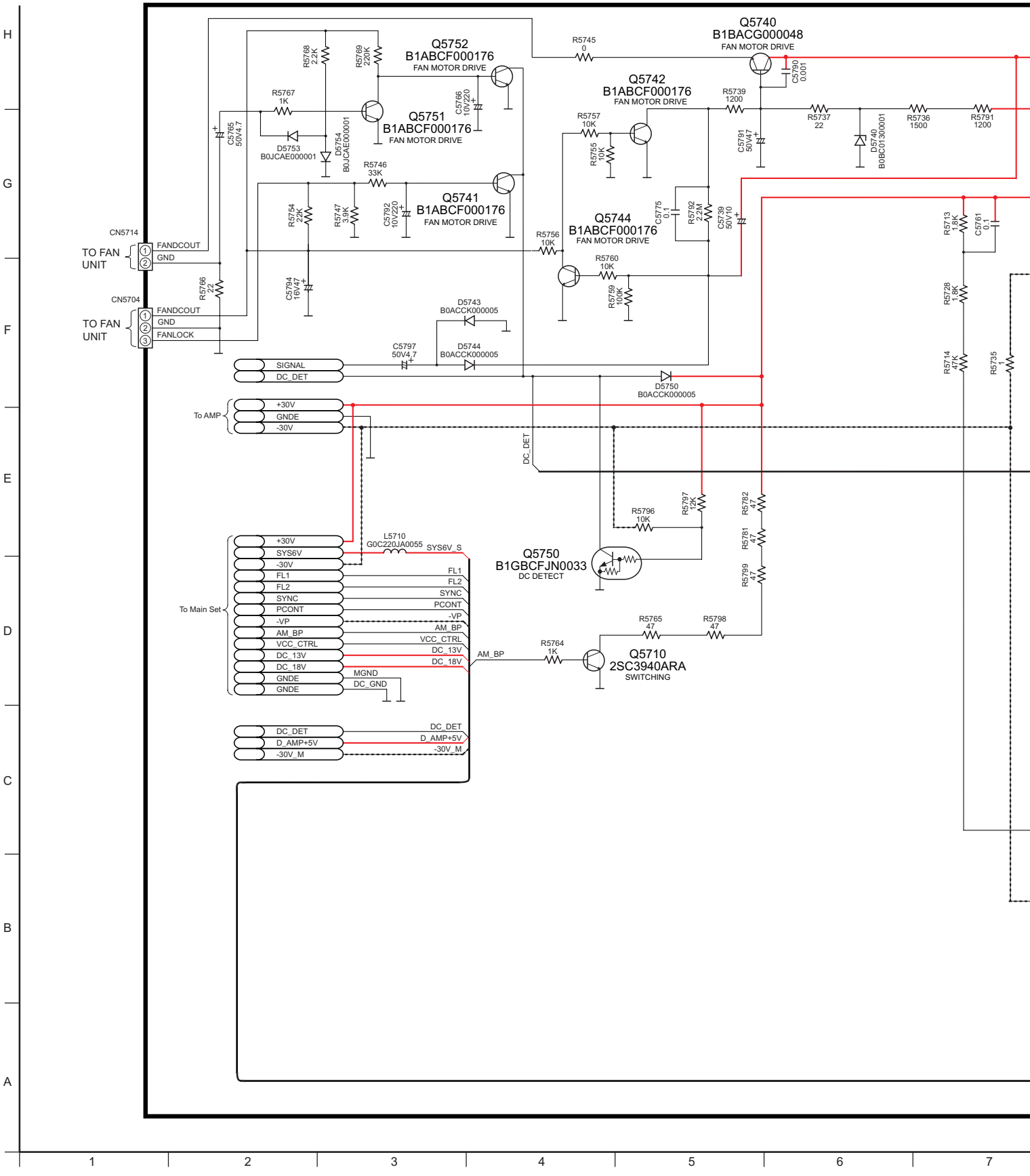


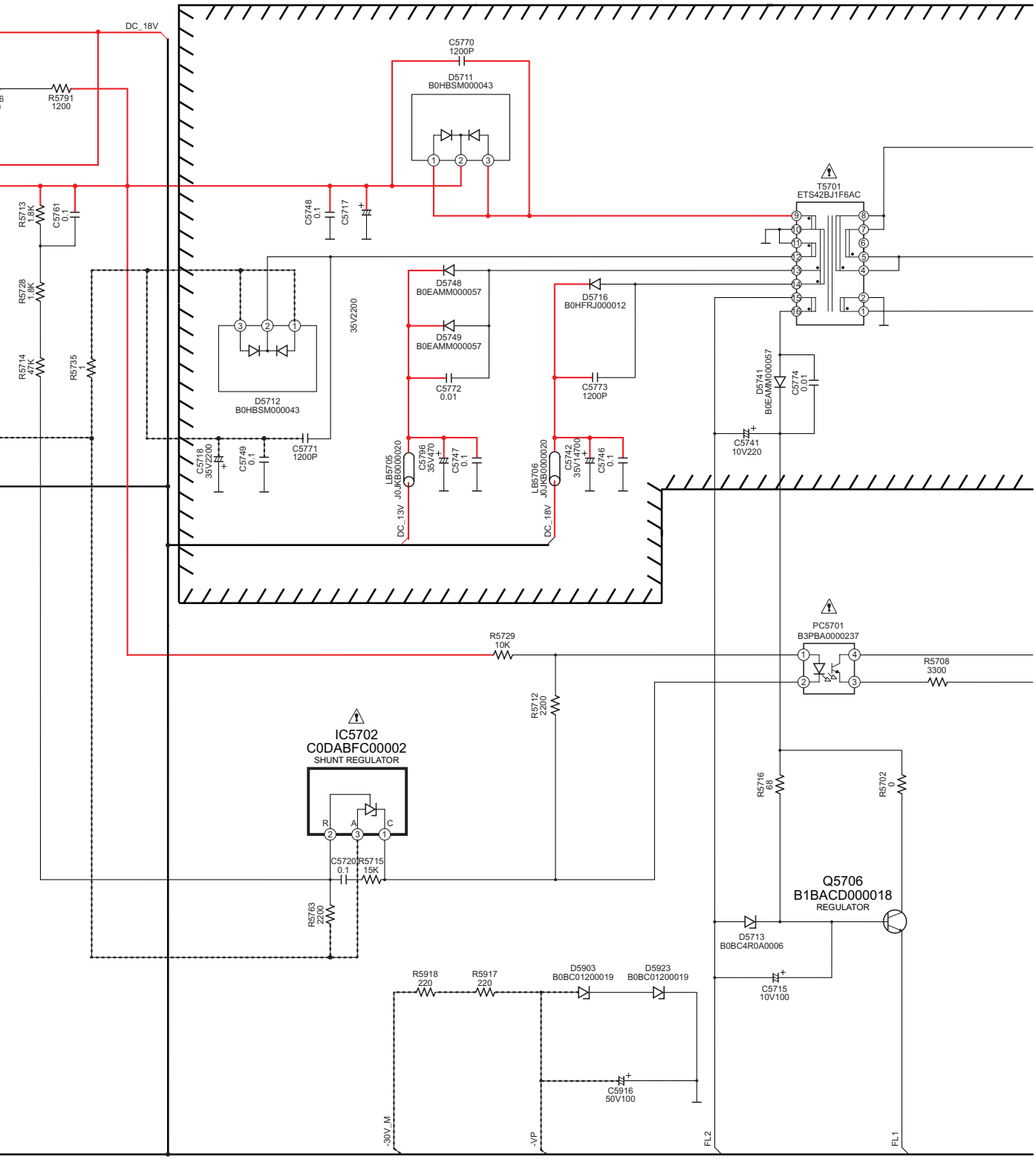
SA-HT990E/EB/EG POWER(DIGITAL AMP) CIRCUIT

SCHEMATIC DIAGRAM-12

B POWER(SMPS) CIRCUIT

—— :+B SIGNAL LINE ----- :-B SIGNAL LINE





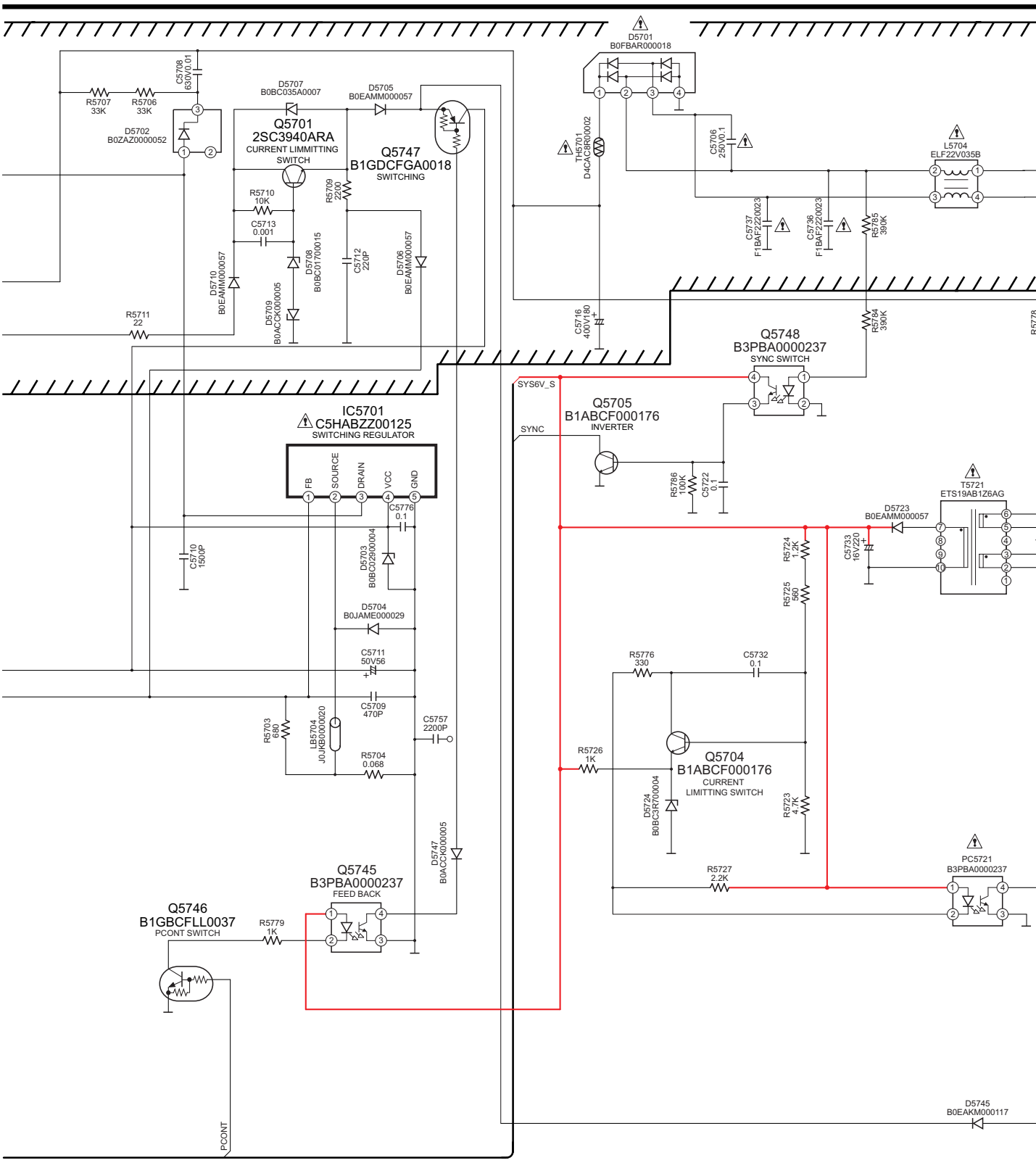
SA-HT990E/EB/EG POWER(SMPS) CIRCUIT

7	8	9	10	11	12	13

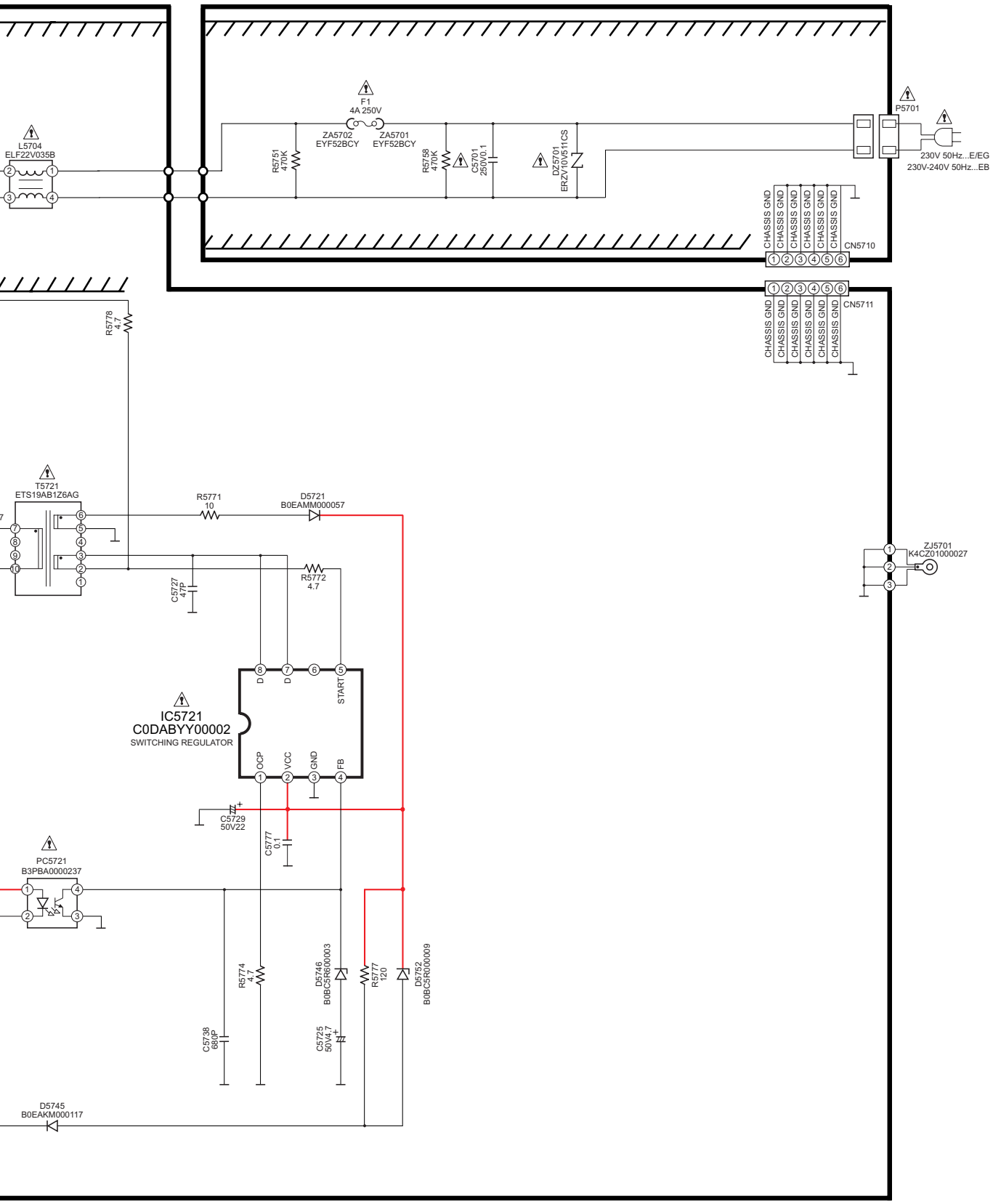
SCHEMATIC DIAGRAM-13

B POWER(SMPS) CIRCUIT

—— :+B SIGNAL LINE



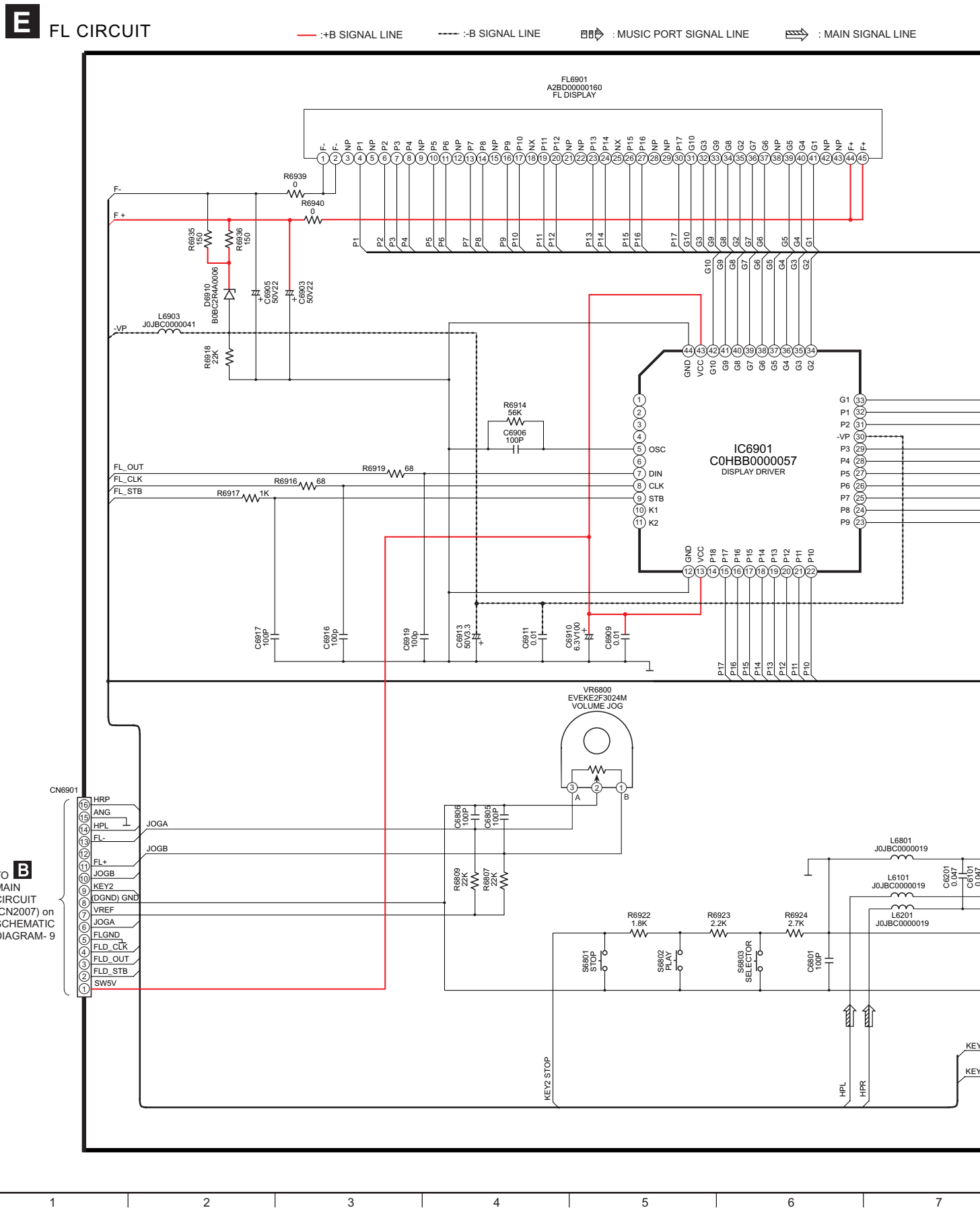
D AC-INLET CIRCUIT



SA-HT990E/EB/EG POWER(SMPS) CIRCUIT

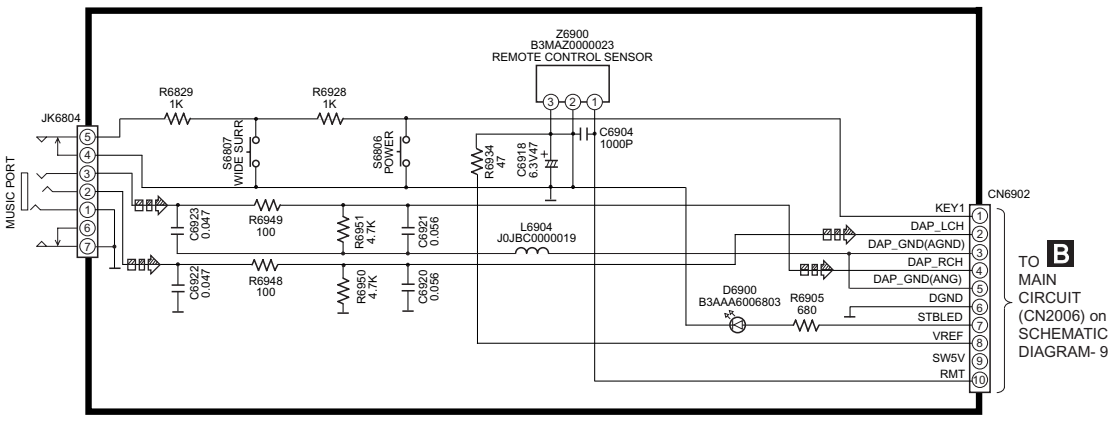
18.3. (C) FL, Music Port, Top Button, Tuner Extent and Tray Motor Circuit

SCHEMATIC DIAGRAM-14

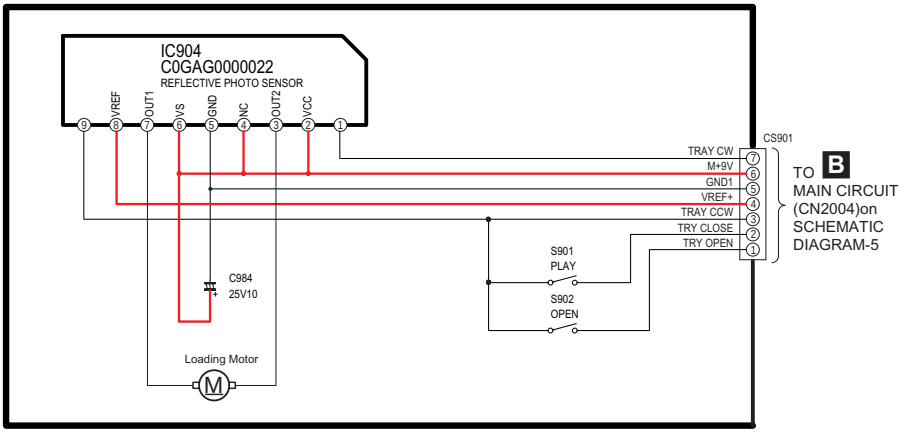


AL LINE

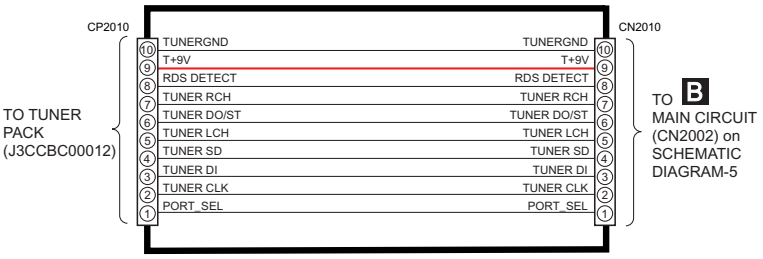
F MUSIC PORT CIRCUIT



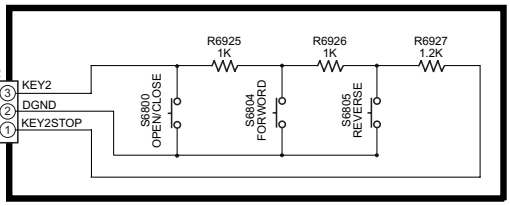
I TRAY LOADING CIRCUIT

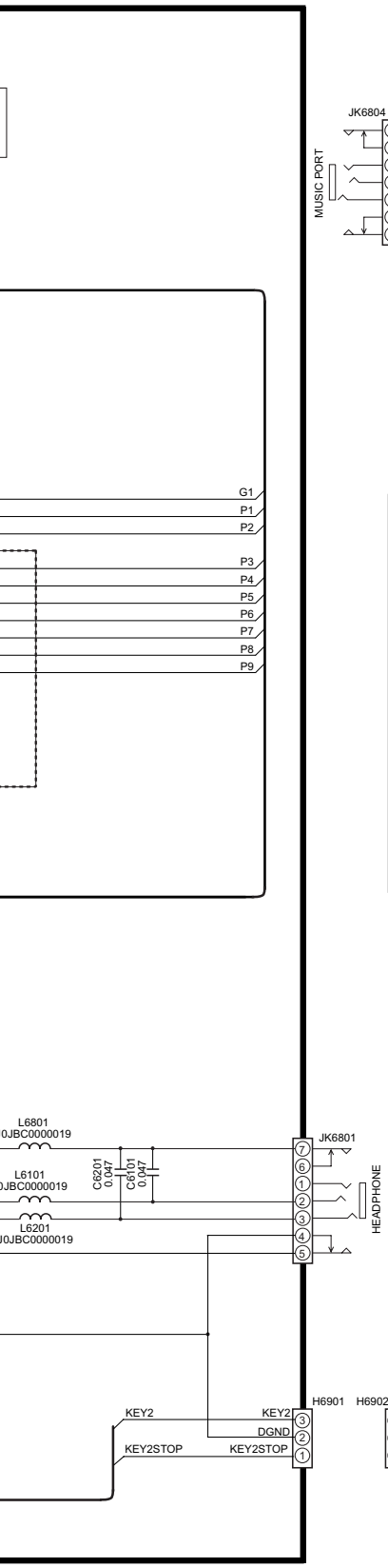


C TUNER EXTENT CIRCUIT



G TOP BUTTON CIRCUIT





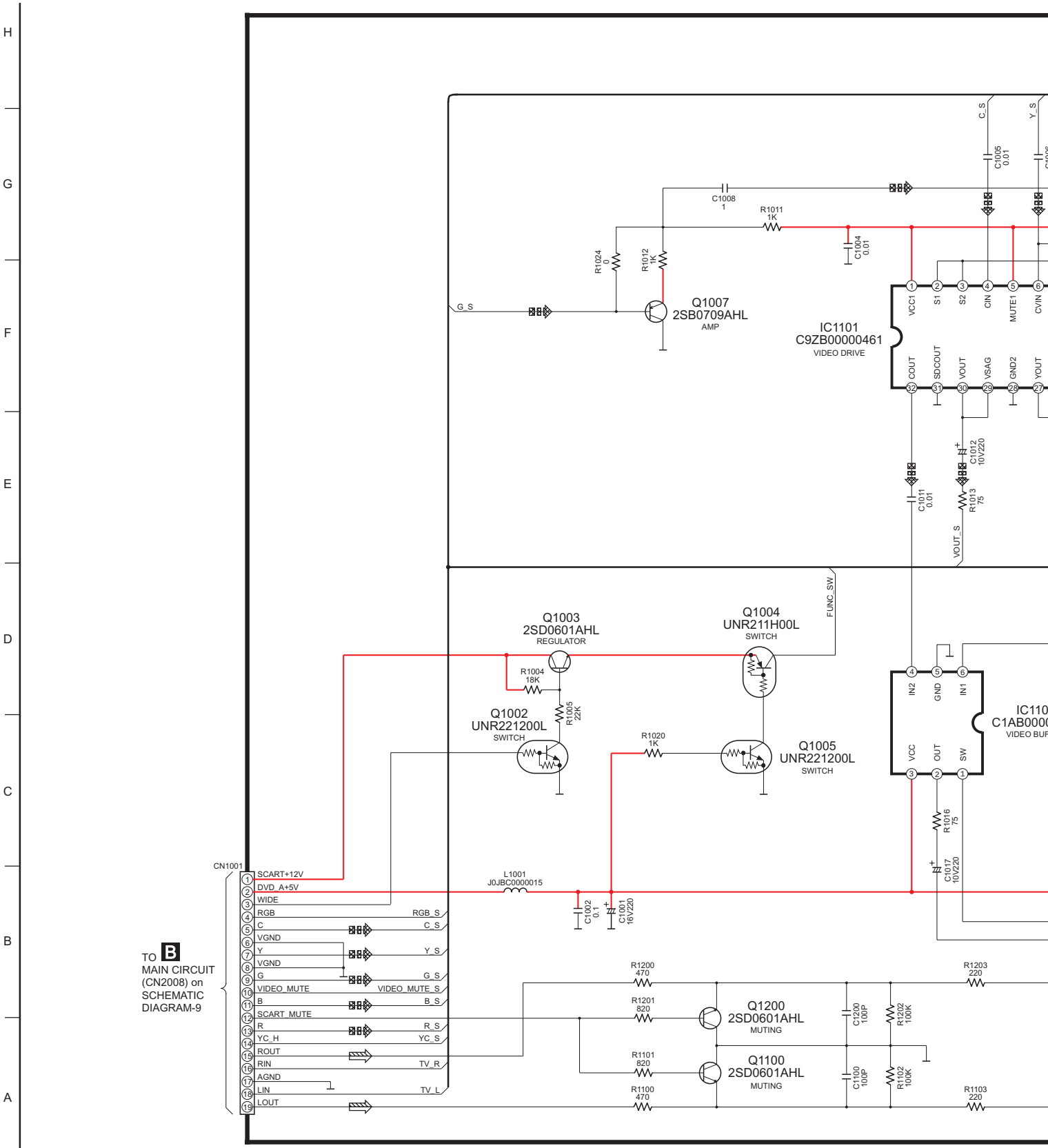
SA-HT990E/EB/EG FL/ MUSIC PORT/ TRAY LOADING/ TUNER EXTENT/ TOP BUTTON CIRCUIT

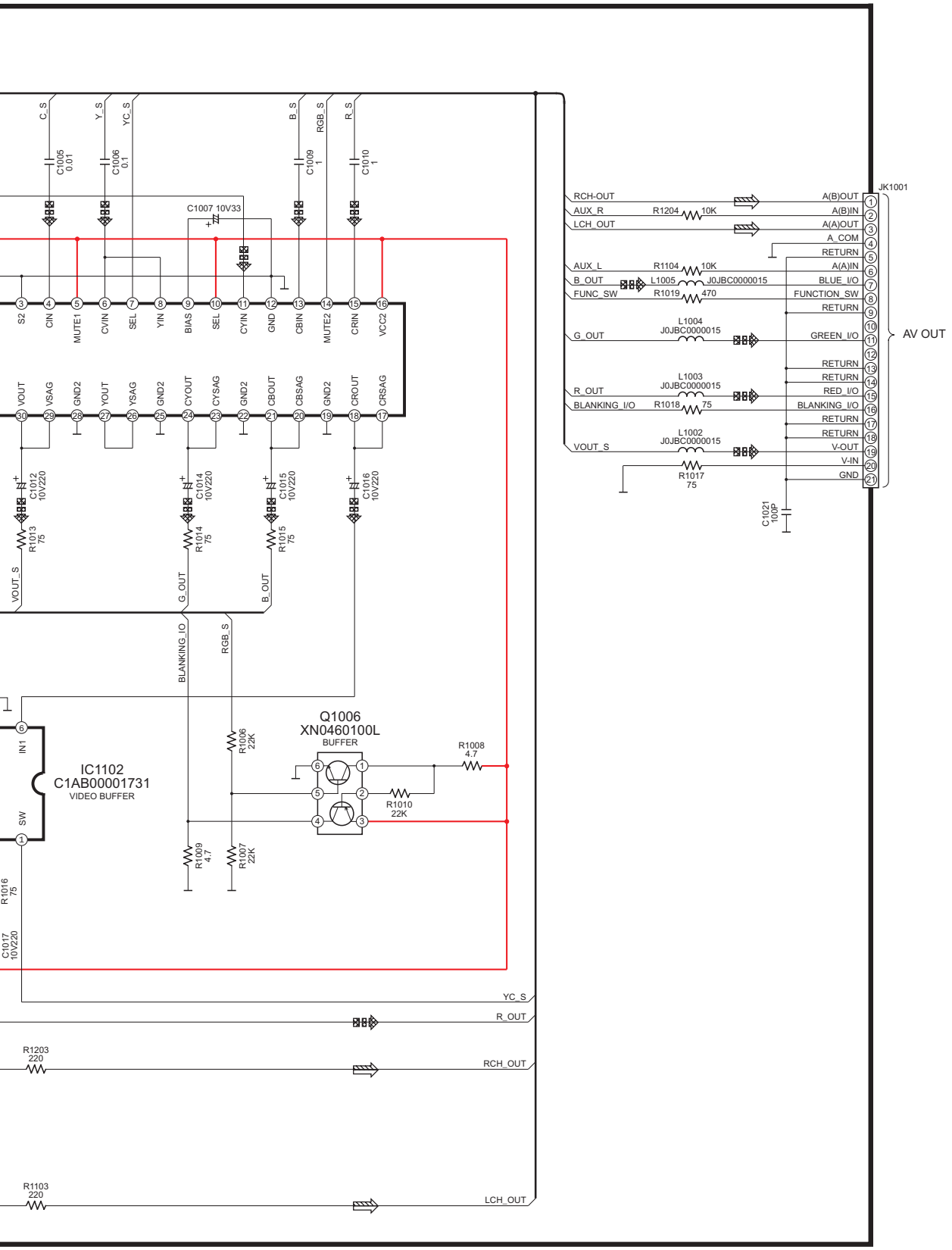
18.4. (D) Scart Circuit

SCHEMATIC DIAGRAM - 15

H SCART CIRCUIT

—— :+B SIGNAL LINE ⇨ : MAIN SIGNAL LINE ⇨ : DVD VIDEO SIGNAL LINE





SA-HT990E/EB/EG SCART CIRCUIT

7 | 8 | 9 | 10 | 11 | 12 | 13

WF No. IC2018-13 (PLAY)

5.4Vp-p(100nsec/div)

WF No. IC2102-20 (PLAY)

0.1Vp-p(500usec/div)

WF No. IC2102-30 (PLAY)

4.4Vp-p(5msec/div)

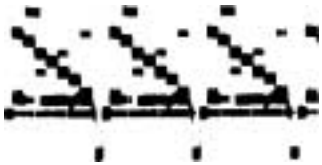
WF No. IC2103-7 (PLAY)

1.2Vp-p(2usec/div)

WF No. IC2801-4 (PLAY)

0.7Vp-p(2msec/div)

WF No. IC2801-8 (PLAY)



1.1Vp-p(20usec/div)

WF No. IC2801-11 (PLAY)

1Vp-p(20usec/div)

WF No. IC2801-13 (PLAY)

0.5Vp-p(20usec/div)

WF No. IC2801-15 (PLAY)

0.4Vp-p(20usec/div)

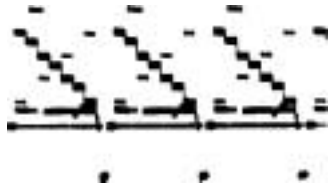
WF No. IC2801-18 (PLAY)

0.9Vp-p(20usec/div)

WF No. IC2801-21 (PLAY)

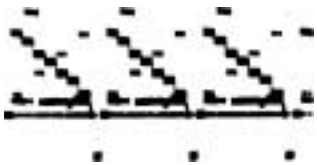
0.9Vp-p(20usec/div)

WF No. IC2801-24 (PLAY)



2.2Vp-p(20usec/div)

WF No. IC2801-27 (PLAY)

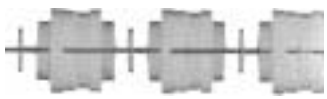


2.2Vp-p(20usec/div)

WF No. IC2801-30 (PLAY)

2.2Vp-p(20usec/div)

WF No. IC2801-32 (PLAY)



1.3Vp-p(20usec/div)

WF No. IC5000-10 (PLAY)

92Vp-p(500nsec/div)

WF No. IC5200-14 (PLAY)

96Vp-p(500nsec/div)

WF No. IC5300-14 (PLAY)

96Vp-p(500nsec/div)

WF No. IC5400-10 (PLAY)

100Vp-p(500nsec/div)

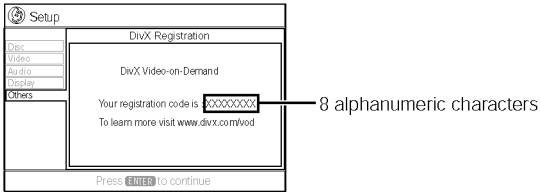
Problems	Checking Points	Checking components
1) Distorted picture or abnormal sound is heard during initialisation	a) Check SDRAM address, data bus, CLK and other control signals waveform	IC8051
	b) Check video signals	LB8301, R8321, R8322, LB8302, R8325, R8326
	c) Check audio DAC circuitry ***Compare the above with OK condition Module**	IC8421 ***Check for solder short and/or component missing/damaged**
2) No TOC/Long TOC	a) Check motor driver circuitry (voltages)	IC8251
	b) Check laser drive circuitry (voltages and current)	Q8550, Q8551, Q8552, Q8560, Q8561, Q8562
	c) Check LSI connection to motor drive circuitry ***Compare the above with OK condition Module**	IC8001 ***Check for solder short and/or component missing/damaged**
3) Disc not spinning 4) Traverse not moving	a) Check connection from Backend Module to Traverse unit	FP8201
5) Traverse and spindle abnormal movement	b) Check motor driver circuitry on voltages and control signals ***Compare the above with OK condition Module**	IC8251 ***Check for solder short and/or component damaged**
6) Cannot read disc but spindle is spinning	a) Check laser drive circuitry (voltages and current)	Q8550, Q8551, Q8552, Q8560, Q8561, Q8562
- Cannot read CD	- Check CD laser drive	Q8550, Q8560, Q8561, Q8562
- Cannot read DVD	- Check DVD laser drive ***Check voltages and LD current and compare with OK Module**	Q8550, Q8551, Q8552, Q8560 ***Check for solder short and/or component missing/damaged**
7) Block noise during play	a) Check SDRAM address and data bus signal ***Compare the above with OK condition Module**	IC8051 ***Check for solder short and/or component damaged**

Problems	Checking Points	Checking components
8) Jitter out of specification	a) Check LD current b) Check OPU (change to other unit and confirm)	OPU unit (FFC connection)

DivX Video-on-Demand (VOD) content is encrypted for copyright protection. In order to play DivX VOD content on this unit, you first need to register the unit.

Follow the online instructions for purchasing DivX VOD content to enter the unit's registration code and register the unit. For more information about DivX VOD, visit www.divx.com/vod.

Display the unit's registration code



- We recommend that you make a note of this code for future reference.
- After playing DivX VOD content for the first time, another registration code is then displayed in "DivX Registration". Do not use this registration code to purchase DivX VOD content. If you use this code to purchase DivX VOD content, and then play the content on this unit, you will no longer be able to play any content that you purchased using the previous code.
- If you purchase DivX VOD content using a registration code different from this unit's code, you will not be able to play this content. ("Authorization Error" is displayed.)

Regarding DivX content that can be only be played a set number of times

Some DivX VOD content can only be played a set number of times. When you play this content, the remaining number of plays is displayed. You cannot play this content when the number of remaining plays is zero. ("Rented Movie Expired" or "Rental Expired" is displayed.)

When playing this content

- The number of remaining plays is reduced by one if
  - you press [⏻] or press and hold [—SETUP].
  - you press [■ STOP]. (Press [❚❚ PAUSE] to pause play.)
  - you press [⏮, ⏭ SKIP] or [◀◀, ▶▶SLOW/SEARCH] etc. and arrive at another content or the start of the content being played.
- Resume and Marker functions do not work.

FL P.C.B.

Ref No.	IC6901																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CD PLAY	4.9	0	0	-0.1	2.8	-	0.7	4.6	3.7	-	-	0	4.8	-21.0	-21.0	-18.9	-18.8	-14.7	-18.9	-14.7
STANDBY	4.9	0	0	0	2.8	-	0.7	4.6	3.7	-	-	0	4.9	-21.0	-21.0	-21.0	-18.9	-10.5	-8.4	-14.7
Ref No.	IC6901																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
CD PLAY	-12.9	-21.0	-21.0	-14.7	-14.7	-18.9	-21.0	-21.0	-16.8	-21.4	-14.9	-12.8	-19.1	-19.1	-19.1	-19.1	-19.1	-19.1	-19.1	-19.1
STANDBY	-14.7	-21.0	-18.9	-10.5	-10.5	-16.8	-21.0	-18.9	-8.4	-21.4	-12.7	-10.6	-19.1	-19.1	-19.1	-19.1	-19.1	-19.1	-19.1	-19.1
Ref No.	IC6901																			
MODE	41	42	43	44																
CD PLAY	-19.1	-19.1	4.9	-0.1																
STANDBY	-19.1	-19.1	4.9	0																

Scart P.C.B.

Ref No.	IC1101																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CD PLAY	5.0	0.1	0.1	2.2	5.0	1.6	0	1.6	2.2	5.0	0.8	0.1	0.7	0	0.7	4.9	2.6	2.6	0.1	3.1
STANDBY	5.0	0.1	0.1	2.2	5.0	1.6	0	1.6	2.2	5.0	0.9	0.1	0.3	0	0.9	5.0	2.6	2.6	0.1	3.2
Ref No.	IC1101																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32								
CD PLAY	3.2	0.1	2.9	3.2	0.1	1.4	1.4	0.1	1.5	1.5	0.1	2.3								
STANDBY	3.1	0.1	3.1	3.1	0.1	1.4	1.4	0.1	1.4	1.4	0.1	2.3								
Ref No.	IC1102																			
MODE	1	2	3	4	5	6														
CD PLAY	0	2.6	4.9	2.5	0.1	2.5														
STANDBY	0	2.6	5.0	2.5	0.6	2.5														
Ref No.	Q1002				Q1003				Q1004				Q1005							
MODE	E	C	B		E	C	B		E	C	B		E	C	B					
CD PLAY	0.1	12.5	0.1		11.9	13.0	12.6		0	12.6	0		12.0	13.0	12.6					
STANDBY	0.1	12.5	0.1		11.9	13.0	12.6		0	12.6	0		12.3	12.7	12.7					
Ref No.	Q1006							Q1007				Q1009				Q1100				
MODE	1	2	3	4	5	6		E	C	B		E	C	B		E	C	B		
CD PLAY	4.9	4.9	4.9	0	0	0.1		12.0	12.0	0.1		-	-	-		0.3	0	0		
STANDBY	4.9	4.9	4.9	0.1	0	0.1		12.3	-	12.3		-	-	-		0	0	0.8		
Ref No.	Q1200																			
MODE	E	C	B																	
CD PLAY	0.4	0	0																	
STANDBY	0	0	0.8																	

Tray Loading P.C.B.

Ref No.	IC904																			
MODE	1	2	3	4	5	6	7	8	9											
CD PLAY	4.7	8.0	0.6	8.0	0.1	8.0	0.6	2.7	4.7											
STANDBY	0	1.8	0.8	1.8	0	2.1	0.9	4.9	0											

Ref No.	IC2004																			
MODE	1	2	3	4	5	6	7	8												
CD PLAY	-	4.9	0	0	0	0	0	-												
STANDBY	-	4.8	0	0	0	0	0	-												
Ref No.	IC2005																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
CD PLAY	2.5	2.6	2.7	2.7	5.1	0	0	2.7	0	0	0	5.1	1.7	2.5	-	2.6				
STANDBY	2.6	2.6	2.7	5.1	0	0	2.7	0	0	0	5.1	1.8	2.6	2.5	-	2.6				
Ref No.	IC2018																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CD PLAY	0.1	4.7	4.7	4.7	0	0	4.6	0	0	0	0	4.7	2.4	0	2.3	4.7	4.7	4.7	2.1	0
STANDBY	0	0	0	0.1	0	0	0	0	0	0	0	4.9	2.5	0	2.4	4.9	4.9	4.8	2.7	0
Ref No.	IC2018																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
CD PLAY	0	4.7	0	0	0	0	4.7	4.7	4.7	4.7	0	0	0	4.6	0	4.0	4.4	4.6	0	4.6
STANDBY	0	4.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	0	0	0
Ref No.	IC2018																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
CD PLAY	0	4.6	0	0.1	0	0	0	0	0	0	4.7	0	0	0	4.6	4.6	4.6	4.5	4.7	0
STANDBY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ref No.	IC2018																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
CD PLAY	0	4.7	4.7	0	0	0	0	4.6	0	4.4	4.7	4.7	2.5	0	0	0	0	0	0	0
STANDBY	0	4.9	0	0	0	0	0	0	0	0	0	0.7	0	0	0	0	0	0	0	0
Ref No.	IC2018																			
MODE	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
CD PLAY	0	0	0	4.7	0	0	4.7	0	0	0	4.7	0	0.7	1.2	0.4	0	1.6	4.8	4.7	4.7
STANDBY	0	0	0	0	0	0	0	0	0	0	4.8	0	0.7	1.2	0.4	0	1.6	4.9	4.9	0
Ref No.	IC2102																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CD PLAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STANDBY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ref No.	IC2102																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
CD PLAY	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0.1
STANDBY	0	0	0	0	0	0	0	0	0	0	0	0.1	0	0	0	0	0	0	0	0.1
Ref No.	IC2102																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
CD PLAY	0	0	0	0	0	0	0	0	0	1.3	0	0	0	0.1	0	0	0	0	0	0
STANDBY		0	0	0	0	0	0	0	0	1.4	0	0	0	0.1	0	0	0	0	0	0
Ref No.	IC2102																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
CD PLAY	0	-0.1	0	0	4.8	0	5.6	0	0	0	0	0	0	0	0	0	0	0	0	0
STANDBY	0	-0.1	0	0	4.8	0	5.6	0.1	0	0	0	0	0	0	0	0	0	0	0	0
Ref No.	IC2102																			
MODE	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
CD PLAY	0	0	0	0	-6.2	6.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STANDBY	0	0	0	0	-6.4	6.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ref No.	IC2103																			
MODE	1	2	3	4	5	6	7	8												
CD PLAY	0	0	0	-6.2	0	0	0	6.2												
STANDBY	0	0	0	-6.4	0	0	0	6.5												
Ref No.	IC2104																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
CD PLAY	6.4	5.2	0.2	7.0	0	2.1	6.3	6.2	2.4	0	0.7	0	0.2	6.3						
STANDBY	6.4	5.2	0.2	7.0	0	2.1	6.3	6.2	2.4	0	0.7	0	0.2	6.3						
Ref No.	IC2105																			
MODE	1	2	3	4	5	6	7	8												
CD PLAY	0	0	0	-6.2	0	0	0	6.3												
STANDBY	0	0	0	-6.4	0	0	0	6.5												
Ref No.	IC2205																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
CD PLAY	6.3	6.3	6.4	7.0	0	0.1	-5.5	-0.1	0	0	-6.9	0	0	0						
STANDBY	6.3	6.3	6.4	7.0	0	0.1	-5.5	-0.1	0	0	-6.9	0	0	0						
Ref No.	IC2301																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
CD PLAY	0	6.2	3.3	6.2	-5.5	-5.5	-6.9	0	0	0.1	0	0	0	0	0	7.0				
STANDBY	0	6.2	3.3	6.3	-5.5	-5.5	-6.9	0	0	0.1	0	0	0	0	0	7.0				
Ref No.	IC2600																			
MODE	1	2	3	4	5	6	7	8												
CD PLAY	0	0	0	-6.3	0	0	0	6.3												
STANDBY	0	0	0	-6.4	0	0	0	6.4												
Ref No.	IC2801																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CD PLAY	4.9	0	0	2.1	4.7	1.6	0	1.6	2.1	0	1.6	0	2.1	4.7	2.1	4.9	2.2	2.2	0	2.2
STANDBY	4.9	0	0	2.1	4.7	1.5	0	1.5	2.1	0	1.6	0	2.1	4.7	2.1	4.9	2.2	2.2	0	2.2
Ref No.	IC2801																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32								
CD PLAY	2.2	0	1.5	1.7	0	1.5	2.0	0	1.6	1.8	0	2.2								
STANDBY	2.2	0	1.4	1.7	0	1.4	1.7	0	1.5	1.8	0	2.2								
Ref No.	IC2802							IC2903												
MODE	1	2	3	4	5	6		1	2	3	4	5								
CD PLAY	0	2.5	4.8	2.5	0	2.5		17.0	5.8	0	1.0	3.1								
STANDBY	0	2.9	4.8	2.5	0	2.5		17.1	2.8	0	1.0	3.1								
Ref No.	Q2003				Q2004				Q2006				Q2030							
MODE	E	C	B		E	C	B		E	C	B		E	C	B					
CD PLAY	0	2.2	0		0	0	4.5		1.1	0	0.5		0	0	4.7					
STANDBY	0	0.1	0		0	0	0		0	0	0		0	0	4.6					
Ref No.	Q2101							Q2201				Q2303				Q2304				
MODE	1	2	3	4	5	6		E	C	B		E	C	B		E	C	B		
CD PLAY	0	-4.2	0	0	-4.2	0		0	4.2	0		0	-4.6	0		0	0	0.7		
STANDBY	0	0.6	0	0	0.6	0		1.8	1.8	0		0	-4.6	0		0	0	0.7		
Ref No.	Q2305							Q2306						Q2801						
MODE	1	2	3	4	5	6		1	2	3	4	5	6		E	C	B			
CD PLAY	0	0.6	0	0	0.6	0		0	-4.6	0.1	0	-4.6	3.3		16.2	-3.0	16.1			
STANDBY	0	0.6	0	0	0.6	0		0	-4.6	0.1	0	-4.6	3.3		0.5	0.2	0.5			
Ref No.	Q2804				Q2805				Q2903				Q2904				Q2906			
MODE	E	C	B		E	C	B		E	C	B		E	C	B		E	C	B	
CD PLAY	8.6	14.0	9.2		4.3	5.4	4.9		6.3	6.3	6.9		6.2	9.2	6.9		-6.3	-21.0	-6.8	
STANDBY	0	0	0.5		0	0	0		6.5	6.5	7.1		6.2	9.2	6.9		-6.9	-21.0	-6.4	
Ref No.	Q2907				Q2909				Q2910				Q2912							
MODE	E	C	B		E	C	B		E	C	B		E	C	B					
CD PLAY	0	-6.9	-0.6		-2.2	4.9	0		12.9	21.2	13.5		9.2	11.1	9.8					
STANDBY	0	-6.9	-0.6		-2.2	4.8	0		12.9	21.2	13.5		9.2	11.2	9.8					
Ref No.	Q2913				Q2914				Q2915				Q2955							
MODE	E	C	B		E	C	B		E	C	B		E	C	B					
CD PLAY	9.2	11.1	9.8		3.2	3.5	3.7		4.7	4.9	4.7		5.1	5.7	5.7					
STANDBY	9.2	11.2	9.8		3.2	3.2	3.8		4.6	4.8	4.7		5.1	5.7	5.7					

Ref No.	IC5000																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CD PLAY	2.6	0	0	29.2	0	-29.2	-21.2	29.5	8.2	-3.4	-29.4	-16.8	-29.2	-3.4	8.2	29.5	-29.2	-29.2	0	29.2
STANDBY	2.6	0	0	29.2	0	-29.2	-21.2	29.2	8.2	-3.4	-29.4	-16.8	-29.4	-3.4	8.2	29.5	-29.2	-29.2	0	29.2

Ref No.	IC5000																			
MODE	21	22	23																	
CD PLAY	0	0	3.0																	
STANDBY	0	0	3.0																	

Ref No.	IC5200																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CD PLAY	2.6	0	0	29.2	0	-29.2	-21.3	29.5	7.8	-3.4	-29.4	-17.2	-29.4	-3.4	7.8	29.5	-29.2	-29.2	0	29.2
STANDBY	2.6	0	0	29.2	0	-29.2	-21.3	29.5	7.8	-3.4	-29.4	-17.2	-29.4	-3.4	7.8	29.5	-29.2	-29.2	0	29.2

Ref No.	IC5200																			
MODE	21	22	23																	
CD PLAY	0	0	3.0																	
STANDBY	0	0	3.0																	

Ref No.	IC5300																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CD PLAY	2.6	0	0	29.2	0	-29.2	-21.3	29.5	7.8	-3.4	-29.4	-17.2	-29.4	-3.4	7.8	29.5	-29.2	-29.2	0	29.2
STANDBY	2.6	0	0	29.2	0	-29.2	-21.3	29.3	7.8	-3.4	-29.4	-17.2	-29.4	-3.4	7.8	29.5	-29.2	-29.2	0	29.2

Ref No.	IC5300																			
MODE	21	22	23																	
CD PLAY	0	0	3.0																	
STANDBY	0	0	3.0																	

Ref No.	IC5400																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CD PLAY	2.6	0	0	29.2	0	-29.2	-21.3	29.5	7.8	-3.4	-29.4	-17.1	-29.4	-3.4	-7.9	29.5	-29.2	-29.2	0	29.2
STANDBY	2.6	0	0	29.2	0	-29.2	-21.3	29.3	7.8	-3.4	-29.4	-17.0	-29.4	-3.4	-7.9	29.5	-29.2	-29.2	0	29.2

Ref No.	IC5400																			
MODE	21	22	23																	
CD PLAY	0	0	3.0																	
STANDBY	0	0	3.0																	

Ref No.	IC5500																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
CD PLAY	0	5.3	2.6	2.8	2.4	2.6	0	4.9	1.7	2.6	2.8	3.6	1.4	5.5						
STANDBY	0	5.3	2.6	2.8	2.4	2.6	0	4.9	1.4	2.6	2.8	4.5	1.6	5.6						

Ref No.	IC5701					IC5702				IC5721										
MODE	1	2	3	4	5		1	2	3		1	2	3	4	5	6	7	8		
CD PLAY	1.6	0	162.0	16.9	0		13.2	-29.4	-26.8		0	18.6	0	0.9	160.4	0	160.8	161.3		
STANDBY	1.2	0	162.0	16.9	0		13.1	-29.4	-26.8		0	18.7	0	0.9	161.2	0.1	161.9	161.7		

Ref No.	Q5101				Q5102				Q5500				Q5501				Q5601			
MODE	E	C	B		E	C	B		E	C	B		E	C	B		E	C	B	
CD PLAY	0	4.8	0		0	4.8	0		2.8	0	5.3		2.8	2.8	2.5		0	0	0.6	
STANDBY	0	4.8	0		0	4.8	0		2.8	0	5.4		2.8	2.8	2.5		0	0	0.6	

Ref No.	Q5602				Q5603				Q5604				Q5701				Q5704			
MODE	E	C	B		E	C	B		E	C	B		E	C	B		E	C	B	
CD PLAY	0	0	0.6		6.2	6.2	5.6		0	0	0.7		7.4	8.6	6.5		3.5	4.2	4.0	
STANDBY	0	0	0.6		6.2	6.2			0	0	0.7		7.4	8.6	6.4		3.6	4.2	4.0	

Ref No.	Q5705				Q5706				Q5710				Q5740				Q5741			
MODE	E	C	B		E	C	B		E	C	B		E	C	B		E	C	B	
CD PLAY	0	3.3	0.4		-18.2	-16.7	-17.6		0	29.5	0		8.9	17.1	9.5		0	4.9	0	
STANDBY	0	3.4	0.4		-18.1	-16.2	-17.5		0	29.5	0		8.9	17.1	9.5		0	4.9	0	

Ref No.	Q5742				Q5744				Q5745				Q5746				Q5747			
MODE	E	C	B		1	2	3		1	2	3	4		E	C	B		E	C	B
CD PLAY	0	0.1	0.7		0	4.6	0.1		5.6	4.4	0	0.4		0	0.1	4.8		17.0	16.9	1.0
STANDBY	0	0.1	0.7		0	4.6	0		5.6	4.4	0	0.4		0	0.1	4.7		17.0	16.9	1.0

Ref No.	Q5748				Q5750			Q5751			Q5752									
MODE	1	2	3	4	E	C	B	E	C	B	E	C	B							
CD PLAY	0.6	0	0.4	5.6	0	4.9	-2.5	-	-	-	-	-	-							
STANDBY	0.6	0	0.4	5.6	0	4.9	-2.5	-	-	-	-	-	-							

Ref No.	IC8001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CD PLAY	0.1	0.1	3.4	0.1	0.1	0.1	0.1	3.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	3.4	2.6	2.6	0.1
Ref No.	IC8001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
CD PLAY	-	1.3	1.1	1.2	1.6	1.1	1.5	1.3	1.2	2.5	0.1	1.3	1.0	0.1	3.4	3.3	1.3	1.9	1.1	1.7
Ref No.	IC8001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
CD PLAY	1.3	0.7	1.2	0.1	1.3	1.3	1.3	1.5	1.5	2.2	1.3	0.1	-	-	3.4	1.1	2.0	2.2	1.9	1.1
Ref No.	IC8001																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
CD PLAY	2.2	2.0	2.4	2.7	0.1	3.4	3.4	0.1	3.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Ref No.	IC8001																			
MODE	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
CD PLAY	0.1	0.1	1.3	3.3	0.1	0.1	3.4	3.4	3.4	2.0	1.6	0.1	3.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Ref No.	IC8001																			
MODE	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
CD PLAY	0.1	3.3	1.0	0.1	2.4	1.9	0.3	0.1	1.8	3.3	3.3	1.3	1.9	1.9	1.9	1.7	1.7	1.7	1.7	2.0
Ref No.	IC8001																			
MODE	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140
CD PLAY	1.5	0.1	0.5	0.1	0.1	1.9	2.3	1.7	2.6	2.6	2.7	2.6	2.7	2.7	2.5	2.6	2.5	2.5	1.8	2.0
Ref No.	IC8001																			
MODE	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160
CD PLAY	1.7	1.7	0.1	1.7	1.7	3.4	0.9	0.9	0.4	3.4	2.0	1.0	1.0	2.0	0	0.4	3.3	3.4	0	3.4
Ref No.	IC8001																			
MODE	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180
CD PLAY	0	1.6	1.7	0.1	1.3	1.2	1.7	1.7	0.9	0.1	0.1	0.9	1.7	0.1	3.4	3.0	3.4	0.1	3.4	0.1
Ref No.	IC8001																			
MODE	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200
CD PLAY	3.0	0.2	2.8	3.4	0.1	0.1	3.4	3.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	3.4	3.0	3.0	2.9
Ref No.	IC8001																			
MODE	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220
CD PLAY	3.1	2.9	3.1	3.4	0.1	3.1	3.0	3.0	3.3	3.1	3.0	3.1	3.0	3.4	0.1	2.9	1.3	2.7	2.7	2.7
Ref No.	IC8001																			
MODE	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240
CD PLAY	3.3	0.1	1.7	3.4	1.7	0.1	3.3	3.3	3.2	0.1	2.0	0.1	0.1	1.3	1.7	0.1	0.1	0.1	3.4	1.6
Ref No.	IC8001																			
MODE	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256				
CD PLAY	0.1	1.7	0.2	1.7	0.3	1.6	1.6	0.1	0	0.1	0.1	0.1	0.1	0.1	0.1	0.1				
Ref No.	IC8051																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CD PLAY	3.4	3.0	3.4	3.1	3.1	0.1	3.1	3.3	3.4	3.0	3.0	0.1	2.9	3.4	2.7	3.3	3.3	3.3	3.2	2.0
Ref No.	IC8051																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
CD PLAY	1.7	0.1	0.1	0.2	0.3	1.5	3.4	0.1	1.6	1.7	1.7	1.6	0.1	0.1	0.1	-	3.4	1.7	2.7	-
Ref No.	IC8051																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	54					
CD PLAY	0.1	3.0	3.4	3.1	3.0	0.1	3.0	3.2	3.4	2.9	2.9	0.1	3.0	0.1	0.1					
Ref No.	IC8111																			
MODE	1	2	3	4	5	6	7	8												
CD PLAY	3.4	-	0.1	-	4.4	-	-	4.7												
Ref No.	IC8151																			
MODE	1	2	3	4	5															
CD PLAY	3.0	3.0	0.1	1.3	0.9															
Ref No.	IC8251																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CD PLAY	1.7	1.7	1.7	2.2	2.2	1.9	0.1	4.7	3.4	0.1	2.4	2.4	2.4	2.4	4.4	4.5	5.3	3.5	0.1	3.4
Ref No.	IC8251																			
MODE	21	22	23	24	25	26	27	28												
CD PLAY	9.2	9.1	1.8	1.7	1.7	1.7	3.4	4.3												
Ref No.	IC8421																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CD PLAY	0	2.3	3.0	3.4	1.7	0.9	1.7	1.7	4.9	0	0.9	0.1	0.1	0	2.4	2.4	4.9	0	2.4	2.4
Ref No.	IC8421																			
MODE	21	22	23	24	25	26	27	28												
CD PLAY	2.4	2.4	4.9	0	2.5	2.4	2.4	4.8												
Ref No.	IC8601																			
MODE	1	2	3	4																
CD PLAY	3.3	1.3	0.1	0.1																
Ref No.	IC8606																			
MODE	1	2	3	4	5															
CD PLAY	3.3	3.4	0.1	0.1	-															
Ref No.	IC8611																			
MODE	1	2	3	4	5	6	7	8												
CD PLAY	0.1	0.1	0.1	0.1	3.4	3.4	0.1	3.4												
Ref No.	IC8651																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CD PLAY	0.7	1.1	2.3	1.3	1.9	1.4	2.2	1.3	1.1	0.1	3.4	3.4	3.4	3.4	-	1.2	2.1	2.2	1.9	1.1
Ref No.	IC8651																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
CD PLAY	2.2	2.0	2.5	2.7	2.7	2.7	0.1	2.6	0.7	1.1	1.3	1.0	1.6	1.3	1.3	1.5	3.4	1.7	1.2	1.1
Ref No.	IC8651																			
MODE	41	42	43	44	45	46	47	48												
CD PLAY	1.0	1.1	1.8	1.1	1.7	0.1	3.4	1.4												
Ref No.	IC8691										IC8695									
MODE	1	2	3	4	5						1	2	3	4	4	5				
CD PLAY	3.0	3.0	0.1	4.2	4.7						2.8	2.8	0.1	3.9	3.9	4.7				
Ref No.	Q8551				Q8552				Q8561				Q8562							
MODE	E	C	B		E	C	B		E	C	B		E	C	B					
CD PLAY	0.1	4.6	0.1		0.1	4.6	4.6		1.9	3.5	1.3		3.5	4.1	4.1					
Ref No.	QR8111							QR8420				QR8571								
MODE	1	2	3	4	5	6		E	C	B		E	C	B						
CD PLAY	0.1	0.1	1.4	0.1	0.1	4.4		0	0.1	4.0		3.4	3.3	0.1						